

## **NI 43-101 Technical Report for the Nampala and Mininko Permits (Mali) and Mineral Resource Estimate for the Nampala Gold Mine**

Prepared for



Robex Resources Inc.  
437, Grande Alle Est, Suite 100  
Québec, Québec,  
Canada G1R 2J5

### **Project Location**

Latitude 11°09'14" North and Longitude 06°12'58" West  
Sikasso Region, Mali

### **Prepared by:**

François Kerr-Gillespie, M.Sc., P.Geo.

Eric Kinnan, P.Geo.

Alain Carrier, M.Sc., P.Geo.

Effective Date: July 15, 2018

Signature Date: November 1, 2018



## SIGNATURE PAGE – INNOVEXPLO

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Signed at Longueuil on November 1, 2018

François Kerr-Gillespie, M.Sc., P.Geol.  
InnovExplo Inc.  
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Alain Carrier, M.Sc., P.Geol.  
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## CERTIFICATE OF AUTHOR – FRANÇOIS KERR-GILLESPIE

I, François Kerr-Gillespie, M.Sc., P.Geo., do hereby certify that:

1. I am employed by InnovExplo Inc. at 859, Boulevard Jean-Paul Vincent, Suite 201, Longueuil, Québec, Canada, J4G 1R3.
2. This certificate applies to the report entitled “**NI 43-101 Technical Report for the Nampala and Mininko Permits (Mali) and Mineral Resource Estimate for the Nampala Gold Mine**” (the “Technical Report”) with an effective date of July 15, 2018 and a signature date of November 1, 2018. The Technical Report was prepared for Robex Resources Inc. (the “issuer”).
3. I graduated with a B.Sc. degree in Geology in 2002 from Université du Québec à Montréal (Montréal, Québec). In addition, I obtained an M.Sc. degree in Earth Sciences in 2003 from Université du Québec à Montréal (Montréal, Québec).
4. I am a member of the Ordre des Géologues du Québec (OGQ No. 2021) and the Association of Professional Geoscientists of Ontario (APGO No. 2968).
5. I have worked as a geologist for a total of fourteen (14) years since graduating from university. I acquired my exploration and mining expertise with Cambior Inc. and IAMGOLD Corporation. I have been a geological consultant for InnovExplo Inc. since October 2016.
6. I have read the definition of a qualified person (“QP”) set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a QP for the purposes of NI 43-101.
7. I visited the property multiple times in April, October and December of 2017. My visits lasted between ten (10) and twenty-two (22) days.
8. I am the author of items 2 to 6, 9 to 11, 13, 23 and 24 of the Technical Report. I am co-author of and share responsibility for items 1, 7, 8, 12 and 25 to 27.
9. I am independent of the issuer applying all the tests in section 1.5 of NI 43-101.
10. I have not had prior involvement with the property that is the subject of the Technical Report.
11. I have read NI 43-101 and the items of the Technical Report for which I am responsible have been prepared in compliance with that instrument.
12. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed this 1<sup>st</sup> day of November 2018 in Longueuil, Québec, Canada.

*(Original signed and sealed)*

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## CERTIFICATE OF AUTHOR – ERIC KINNAN

I, Eric Kinnan, P.Geo., do hereby certify that:

1. I am an independent consultant for InnovExplo Inc. at 560 3<sup>e</sup> Avenue, Val-d'Or, Québec, Canada, J9P 1S4.
2. This certificate applies to the report entitled "**NI 43-101 Technical Report for the Nampala and Mininko Permits (Mali) and Mineral Resource Estimate for the Nampala Gold Mine**" (the "Technical Report") with an effective date of July 15, 2018 and a signature date of November 1, 2018. The Technical Report was prepared for Robex Resources Inc. (the "issuer").
3. I graduated with a B.Sc. degree in Geology in 1995 from Université du Québec à Montréal (Montréal, Québec).
4. I am a member of the Ordre des Géologues du Québec (OGQ No. 788).
5. I have worked as a geologist for a total of twenty-three (23) years since graduating from university in 1995. My expertise was acquired while working as an exploration geologist and manager for several companies in West Africa and South America since 1994 and as a geological consultant for clients in Mali and Côte d'Ivoire. The companies I have worked for include Crucible Gold, Major Star CI, Golden Star Resources, Vannessa Ventures Ltd, Vannessa Guyana Inc, and Vanarde Mining Ltd.
6. I have read the definition of a qualified person ("QP") set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a QP for purposes of NI 43-101.
7. I visited the property multiple times from November 4 to December 8, 2017, and from January 9 to March 6, 2018.
8. I am co-author of and share responsibility for items 1, 7, 8 and 25 to 27 of the Technical Report.
9. I am independent of the issuer applying all the tests in section 1.5 of NI 43-101.
10. I have not had prior involvement with the property that is the subject of the Technical Report.
11. I have read NI 43-101 and the items of the Technical Report for which I am responsible have been prepared in compliance with that instrument.
12. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed this 1<sup>st</sup> day of November 2018 in Longueuil, Quebec, Canada.

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Independent consultant for InnovExplo Inc.

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## CERTIFICATE OF AUTHOR – ALAIN CARRIER

I, Alain Carrier, M.Sc., P.Geo., do hereby certify that:

1. I am employed by InnovExplo Inc. at 560 3<sup>e</sup> Avenue, Val-d'Or, Québec, Canada, J9P 1S4.
2. This certificate applies to the report entitled “**NI 43-101 Technical Report for the Nampala and Mininko Permits (Mali) and Mineral Resource Estimate for the Nampala Gold Mine**” (the “Technical Report”) with an effective date of July 15, 2018 and a signature date of November 1, 2018. The Technical Report was prepared for Robex Resources Inc. (the “issuer”).
3. I graduated with a mining technician degree in Geology in 1989 from Cégep de l’Abitibi-Témiscamingue (Rouyn-Noranda, Québec), and a B.Sc. degree in Geology in 1992 and an M.Sc. degree in Earth Sciences in 1994 from Université du Québec à Montréal (Montréal, Québec). I initiated a PhD degree in Geology at INRS-Géoresources (Sainte-Foy, Québec) for which I completed the course program but not the thesis.
4. I am a member of the Ordre des Géologues du Québec (OGQ No. 281), the Association of Professional Geoscientists of Ontario (APGO No. 1719), the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (NAPEG No. L2701), the Canadian Institute of Mines, Metallurgy and Petroleum (CIM No. 91323), and the Society of Economic Geologists (SEG No. 132243).
5. I am co-president, founder and consulting geologist for InnovExplo since October 2003 (15 years). Since graduating from university, I have worked for twenty-six (26) years as a geologist, including with InnovExplo in the supervision and execution of numerous mandates (from exploration programs to mineral resource estimates, 43-101 technical reports, audits, etc.) and, before founding InnovExplo, in mining and exploration with various companies (Cambior Exploration, Silidor Mine, Bouchard-Hébert Mine, Sigma-Lamaque Mine, South-Malartic Exploration, McWatters Exploration). Before that period, I was also involved in the mining industry as a geological technician (Francoeur Mine, Ministère des Ressources naturelles, Cambior Exploration).
6. I have read the definition of a qualified person (“QP”) set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a QP for purposes of NI 43-101.
7. I have not visited the property for the purpose of the Technical Report.
8. I am responsible for the overall supervision of the Technical Report. I am the author of item 14. I am co-author of and share responsibility for items 1, 12 and 25 to 27.
9. I am independent of the issuer applying all the tests in section 1.5 of NI 43-101.
10. I have not had prior involvement with the property that is the subject of the Technical Report.
11. I have read NI 43-101 and the items of the Technical Report for which I am responsible have been prepared in compliance with that instrument.
12. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed this 1<sup>st</sup> day of November 2018 in Val-d'Or, Québec.

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## 1. SUMMARY

### 1.1 Introduction

At the request of Augustin Rousselet, Vice-president Finance (CFO) and Chief Operation Officer (COO) of Robex Resources Inc., InnovExplo Inc. was retained to prepare a NI 43-101 technical report on the Nampala and Mininko permits (collectively, the Property) to present and support the results of a new mineral resource estimate (the “2018 MRE”) for the Nampala gold mine in accordance with National Instrument 43 101 (NI 43 101) and Form 43 101F1.

InnovExplo is an independent mining and exploration consulting firm based in Val-d’Or, Montréal and Québec City in the province of Québec, Canada.

Robex is a Canadian company trading publicly on the TSX Venture Exchange (TSXV) under the symbol “RBX”, and on the Frankfurt Stock Exchange under the symbol “RB4”.

### 1.2 Report Responsibility and Qualified Persons

The 2018 MRE has been completed by Alain Carrier (P.Geo.) and the Technical Report was prepared by: François Kerr-Gillespie (P.Geo.), project geologist of InnovExplo; Eric Kinnan (P.Geo.), independent consultant for InnovExplo; and Alain Carrier (P.Geo.), co-president and co-founder of InnovExplo. All of the above are independent qualified persons (“QPs”) as defined by NI 43 101.

### 1.3 Property Description, Location and Ownership

The current Property consists of two (2) permits: the Mininko exploration permit (total surface area of 46.6 km<sup>2</sup>) and the Nampala exploitation permit (total surface area of 16.1 km<sup>2</sup>). The Property is located in the Sikasso administrative region of the Republic of Mali, approximately 250 km southeast of the capital city of Bamako.

Robex is the sole owner of the Property but GSI retains a 1% NSR royalty on any production from the entire Property. Robex has a first right of refusal on any agreement GSI would consider regarding the NSR royalty.

Adjacent and immediately south of the Property, the Kamasso exploration permit (total surface area of 100 km<sup>2</sup>) is also wholly owned by Robex with a 1% NSR royalty payable to GSI.

### 1.4 Geological Setting and Mineralization

The Property is located in southern Mali within the Leo-Man Shield of the West African Craton. At a regional scale, the Property is hosted within the Birimian Supergroup of the Baoulé-Mossi Domain. The Nampala Mine and other gold zones located on the Property are hosted in turbidites of the Bagoé Formation flysch sequences belonging to the Birimian Supergroup.

The Nampala gold deposit can be classified as an orogenic turbidite-hosted vein deposit. The mineralized zones consist in subvertical envelopes which host different

veins style (e.g. en echelon tension veins, conjugate vein stockworks, etc.) of different orientation (subvertical, oblique to flat veins). All lithologies and mineralization are affected by saprolite weathering and the 2018 MRE have been subdivided into saprolite (oxide), transition and fresh rocks (sulphide).

### **1.5 Drilling, Sampling Method, Approach and Analysis**

Since the last resource estimate, a total of 20,881 mhas been drilled in 205 holes by Robex. A total of 3,985 min 48 holes (in 2012 and 2014) and a total of 16,896 min 157 holes (in 2017-2018). The latest program has been planned and supervised on-site by InnovExplo.

### **1.6 Data Verification**

InnovExplo's data verification demonstrated the validity of the Project data and protocols. The sample preparation, analysis, QA/QC and security procedures used during the abovementioned drilling programs on the Property followed industry standards and best practices. InnovExplo considers the updated Robex database to be valid and of sufficient quality to be used for the 2018 MRE.

### **1.7 Mineral Resource Estimate**

The 2018 MRE was prepared by Alain Carrier, M.Sc., P.Geo., using all available information.

The resource area measures 2.90 km long, 2.45 km wide and 0.48 km deep. The 2018 MRE is based on a compilation of historical and recent drill holes and on the mineralized zone solids constructed by InnovExplo.

The GEMS database contains a selection of 1,033 holes that cover the strike length of the Project at a drill spacing ranging from 20 to 100 m. They correspond to 84,331 mof drilling (81,143 mof which was sampled), and they yielded 65,871 samples in 1,466 mineralized intervals in the zones and dilution envelopes.

The weathering profiles affecting the rock sequence of the Project were re-interpreted. Differences in the intensity of the weathering process directly influenced some resource parameters, such as bulk density, mining and processing assumptions for the cut-off grade.

InnovExplo based the mineralization wireframe model on the drill hole information and created 17 distinct mineralized domains that honour the drill hole database and that were grouped into five mineralized zones (Main, Intrusion, West, South and East).

InnovExplo is of the opinion that the current mineral resource estimate can be classified as Indicated and Inferred resources. InnovExplo considers the 2018 MRE to be reliable and based on quality data, reasonable hypotheses and parameters that follow CIM Definition Standards.

Next table presents in-pit resources (all zones combined) by weathering profile (saprolite (oxide), transition and fresh rock (sulphide)) at their respective selected cut-off grade of 0.40 g/t Au (saprolite and transition) and 0.75 g/t Au (fresh).

### Nampala 2018 Mineral Resource Estimate

Weathering Profiles	Indicated Resource			Inferred Resource		
	Tonnage (t)	Au (g/t)	Ounces	Tonnage (t)	Au (g/t)	Ounces
Saprolite (≥ 0.40 g/t)	7,606,000	0.72	175,000	2,688,000	0.71	61,000
Transition (≥ 0.40 g/t)	2,361,000	0.80	61,000	626,000	0.79	16,000
Fresh Rock (≥ 0.75 g/t)	181,000	1.03	6,000	115,000	1.08	4,000
<b>TOTAL</b>	<b>10,148,000</b>	<b>0.74</b>	<b>242,000</b>	<b>3,429,000</b>	<b>0.73</b>	<b>81,000</b>

#### 1.8 Other Relevant Data – Nampala Mine Operation

The Nampala Mine is an active open-pit operation, several typical mine and milling facilities have been erected on the site. Nampala reached commercial production on January 1, 2017. As of June 22, 2018, the Nampala Mine had produced approximately 71,000 ounces of gold since startup in 2014.

#### 1.9 Interpretations and Conclusions

InnovExplo concludes the following after conducting a detailed review of all pertinent information and completing the 2018 MRE:

- Geological and grade continuity were demonstrated for the five (5) gold-bearing zones of the Nampala gold deposit;
- The recent and historical drill holes provided sufficient information to complete the 2018 MRE;
- The results are reported for open pit scenarios for saprolite (oxide), transition zone (sap rock) and fresh rocks (sulphide);
- The total Indicated Resources stand at 242,000 ounces of gold (175,000 oz in the oxide profile, 61,000 oz in the transition zone, and 6,000 oz in fresh rock) corresponding to a total of 10,148,000 t at 0.74 g/t Au;
- The total Inferred Resources stand at 81,000 ounces of gold (61,000 oz in the oxide profile, 16,000 oz in the transition zone, and 4,000 oz in fresh rock) corresponding to a total of 3,429,000 t at 0.73 g/t Au;
- The 2017-2018 drilling program had a positive impact on the 2018 MRE, representing an increase of 10.8% in ounces of gold (+8.7% in tonnage and +2.4% in grade) based on sensitivity tests completed with the same parameters, with and without the 2017-2018 drill holes;
- It is likely that additional lateral diamond drilling on the Nampala exploitation permit would increase the Inferred Resource tonnage and upgrade some of the Inferred Resources to the Indicated category;

- There is potential for additional gold discoveries along the NNE-SSW Nampala trend on the Mininko exploration permit.

There is potential for additional resources in the following areas on the Nampala gold deposit:

- Main: this zone continues at depth in fresh rock and could add resources in the main mine area;
- Intrusion and West: mineralization continues in these zones to the west of the Main Zone
- South: this zone is open, with limited drilling beyond the mineralized areas;
- East: this zone is open, with limited drilling beyond the mineralized areas.

InnovExplo concludes that the 2018 MRE warrants advancing the Nampala Project to the mineral reserve upgrade phase conditional on positive results from engineering and economic studies and detailed mine planning.

InnovExplo considers the 2018 MRE to be reliable, thorough, based on quality data, reasonable hypotheses, and parameters that conform to NI 43-101 and CIM Definition Standards.

## 1.10 Recommendations

Based on the 2018 MRE, InnovExplo recommends reviewing and update the mineral reserves of the Nampala gold mine through engineering studies, detailed mine planning and economic studies.

Given the successful results of the 2017-2018 program, more drilling and exploration should be completed with the aim of upgrading resource and adding new resources. A property-wide program should also be completed to explore the entire Property for potential new discoveries.

In summary, InnovExplo recommends the following two-phase program:

### Phase I

- Update mineral reserves (mine planning, engineering and economic studies, and NI 43-101 Technical Report);
- Delineation drilling (to potentially upgrade and add resources) comprising approximately 6,000 mof drilling;
- Exploration drilling on the Main, Intrusion, West, South and East zones (to potentially add new resources) comprising approximately 14,000 mof drilling;
- Property-wide exploration program (Nampala and Mininko) to search for new discoveries;
- Metallurgical testwork to characterize mineralized transition zone and fresh rock material.



## Phase II

- Delineation drilling (to potentially upgrade or add resources) comprising approximately 4,000 m of drilling;
- Exploration drilling on the Main, Intrusion, West, South and East zones (to potentially add new resources) comprising approximately 8,000 m of drilling;
- Property-wide exploration program with the aim of finding new discoveries;
- Updated mineral resource and reserve estimate and NI 43-101 Technical Report.

InnovExplo has prepared a cost estimate for the recommended two-phase work program to serve as a guideline for the Project. Expenditures for Phase 1 are estimated at CAD 4,082,500. Expenditures for Phase 2 are estimated at CAD 2,300,000. The grand total is CAD 6,382,500. Phase 2 is contingent upon the success of Phase 1.

InnovExplo is of the opinion that the recommended two-phase work program and proposed expenditures are appropriate and well thought out, and that the character of the Project is of sufficient merit to justify the recommended program. InnovExplo believes that the proposed budget reasonably reflects the type and the amount of work to be done.

The issuer initiated Phase I with a new drilling program which begun in September 2018 (refer to Robex Press Release of September 24, 2018).

## 2. INTRODUCTION

### 2.1 Overview

At the request of Augustin Rousselet, Vice-president Finance (CFO) and Chief Operation Officer (COO) of Robex Resources Inc. (“Robex” or the “issuer”), InnovExplo Inc. (“InnovExplo”) was retained to prepare a NI 43-101 technical report (the “Technical Report”) on the Nampala and Mininko permits (collectively, the “Property”) to present and support the results of a new mineral resource estimate (the “2018 MRE”) for the Nampala gold mine (the “Project”) in accordance with Canadian Securities Administrators’ National Instrument 43-101 Respecting Standards of Disclosure for Mineral Projects (“NI 43-101” or “43-101”) and Form 43-101F1. For this mandate, Robex’s new management requested that InnovExplo validate the databases, optimize the exploration programs and focus on re-evaluating the entire resource estimation process and key assumptions.

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The 2018 MRE includes new drilling information obtained since the previous mineral resource estimate, which was published in a technical report in 2012 (Marchand, 2012). The 2018 MRE has an effective date of July 15, 2018. The estimate follows CIM Definition Standards for Mineral Resources and Mineral Reserves (“CIM Definition Standards”).

### 2.2 Terms of Reference

The issuer’s acquisition of the Property from Geoservices International Ltd (“GSI”) began in March 2005 and was finalized in April 2007 when Robex exercised its option to acquire the remaining 49% (see Robex press release of April 26, 2007). The current Property has a total surface area of 62.1 km<sup>2</sup> and consists of two parts: *Permis de recherche de Mininko* (the “Mininko Permit”), covering 46.0 km<sup>2</sup>, and the *Permis d’exploitation de Nampala* (the “Nampala Permit”), covering 16.1 km<sup>2</sup> including the Nampala Mine. The Property is located in the Republic of Mali, approximately 250 km southeast (335 km by road) of the capital city of Bamako, 45 km northwest of the Syama Mine, and 91 km southeast of the Morila Mine.

In 2013, Robex started the construction of a mineral processing plant for the Nampala mine site. In May 2014, they announced that the plant was in partial operation at 1,600 tpd of ore. Production was quickly increased to 2,500 tpd of ore by the beginning of July (Robex press releases of May 27 and August 26, 2014). In October, Robex suspended operations to adjust and optimize the recovery circuit and site facilities in order to improve profitability. In June 2015, Robex announced that the mine had resumed operations.

The Nampala Mine reached commercial production on January 1, 2017, and remains in production at the time of this Technical Report. As of June 22, 2018, the mine had produced approximately 71,000 ounces of gold since 2014.

### **2.3 Report Responsibility and Qualified Persons**

This Technical Report was prepared by: François Kerr-Gillespie (P.Geo.), Project Geologist of InnovExplo; Eric Kinnan (P.Geo.), independent consultant for InnovExplo; and Alain Carrier (P.Geo.), co-president and co-founder of InnovExplo.

All of the above are independent qualified persons (“QPs”) as defined by NI 43-101.

Mr. Kerr-Gillespie is a professional geologist in good standing with the OGQ (licence No. 2021), and the APGO (licence No. 2968). He is the author of items 2 to 6, 9 to 11, 13, 23 and 24, and co-author of items 1, 7, 8, 12 and 25 to 27.

Mr. Kinnan is a professional geologist in good standing with the OGQ (licence No. 788). He is co-author of items 1, 7, 8, 12 and 25 to 27.

Mr. Carrier is a professional geologist in good standing with the following associations: OGQ (licence No. 281), APGO (No. 1719), NAPEG (licence No. L2701), CIM (No. 91323) and SEG (No. 132243). He is the author of item 14, and the co-author of items 1, 12 and 25 to 27.

### **2.4 Site Visit**

François Kerr-Gillespie and Stéphane Faure (of InnovExplo) conducted the first site visit from April 13 to 18, 2017, to plan the 2017-2018 drilling program. From October 19, 2017 to March 6, 2018, François Kerr-Gillespie and Eric Kinnan were on site (in rotation) to supervise the 2017-2018 drilling program, except during a brief drilling hiatus from December 23, 2017 to January 10, 2018.

### **2.5 Effective Date**

The effective date of the 2018 MRE is July 15, 2018 and the effective date of the Technical Report is November 1, 2018.

### **2.6 Sources of Information**

The documentation listed in Item 27 was used to support the Technical Report. All excerpts or summaries from documents authored by other consultants are indicated in the text.

InnovExplo’s review of the Property was based on published material in addition to the data, professional opinions and unpublished material submitted by the issuer. InnovExplo has reviewed the data provided by the issuer and/or by its agents.

InnovExplo has also consulted other information sources, principally the Ministry of Mines of Mali Online Repository (<https://mali.revenuedev.org/dashboard>), the

Direction Nationale de la Géologie et des Mines website (<http://dngm.ml/>), and general online information for the physiography of the Property, as well as technical reports, AIFs, MD&A reports, and press releases published by the issuer on SEDAR ([www.sedar.com](http://www.sedar.com)).

InnovExplo conducted a review and appraisal of the information used to prepare this Technical Report, including the conclusions and recommendations, and believes that such information is valid and appropriate considering the status of the Project and the purpose for which the Technical Report is prepared. The QPs have fully researched and documented the conclusions and recommendations made in the Technical Report and affirm that the work program and recommendations presented in the report conform to NI 43-101 and CIM Definition Standards.

InnovExplo is not an expert in legal, land tenure or environmental matters. InnovExplo has relied on data and information provided by the issuer and contained in previously completed technical reports (refer to Item 27). Although InnovExplo has reviewed the available data, they have only validated pertinent portions of the full data set. In doing so, InnovExplo made judgments about the general reliability of the underlying data, and where deemed inadequate or unreliable, the data were not used, or the procedures modified to account for the lack of confidence in that specific information.

The QPs do not have, nor have they previously had, any material interest in the issuer or its related entities. The relationship with the issuer is solely a professional association between the issuer and the independent consultants. The Technical Report was prepared in return for fees based upon agreed commercial rates, and the payment of these fees is in no way contingent on the results of the Technical Report.

## 2.7 Abbreviations, Units and Currencies

A list of abbreviations used in this report is provided in Table 2.1. All currency amounts are stated in Canadian dollars (\$, \$C, CAD), unless indicated otherwise. Quantities are stated in metric units, as per standard Canadian and international practice, including metric tons (tonnes, t) and kilograms (kg) for weight, kilometres (km) or metres (m) for distance, hectares (ha) for area and gram per metric ton (g/t) for gold grades. Wherever applicable, imperial units have been converted to the International System of Units (SI units) for consistency (Table 2.2).

**Table 2.1 – Abbreviations used in the technical report**

Abbreviation or Symbol	Unit or Term
\$	Canadian dollar
%	Percent
°	Angular degree
°C	Degree Celsius
43-101	National Instrument 43-101 – Standards of Disclosure for Mineral Projects ( <i>Regulation 43-101</i> in Québec)
AAS	Atomic absorption spectroscopy

Abbreviation or Symbol	Unit or Term
AC	Air core (drilling)
Ag	Silver
AIF	Annual Information Form
APGO	Association of Professional Geoscientists of Ontario
Au	Gold
BIF	Banded iron formations
BLEG	Bulk leach extractable gold
C	Celsius
CAD	Canadian dollar
CAD:USD	Canadian-American exchange rate
CIL	Carbon-in-leach
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CIM Definition Standards	CIM Definition Standards for Mineral Resources and Mineral Reserves
cm	Centimetre
cm <sup>3</sup>	Cubic centimetre
CoG <sub>OP</sub>	open pit cut-off grade
CRM	Certified reference material
CV, COV	Coefficient of variation
DDH	Diamond drill hole (diamond drilling)
DNGM	Direction National de la Geologie et des Mines
EM	Electromagnetics
FA	Fire Assay
Fe	Iron
G&A	General and administration
g/cm <sup>3</sup>	Gram per cubic centimetre
g/t	Gram per metric ton (tonne)
GRAV	Gravimetric (finish)
ID <sup>2</sup>	Inverse distance squared
IEC	International Electrotechnical Commission
IP	Induced polarization
ISO	International Organization for Standardization
JORC	Joint Ore Reserves Committee
k	Thousand (000)
kg	Kilogram
km	Kilometre
km <sup>2</sup>	Square kilometre
koz	Thousand ounces

Abbreviation or Symbol	Unit or Term
KPI	Key performance indicator
kt	Thousand metric tons
kW	Kilowatt
M	Million
m	Metre
m <sup>2</sup>	Square metre
Ma	Million years
Mag, MAG	Magnetometer, magnetometric
masl	Metres above mean sea level
mesh	US mesh
mm	Millimetre
Moz	Million (troy) ounces
MRE	Mineral resource estimate
Mt	Million metric tons (tonnes)
MW	Megawatt
NI 43-101	National Instrument 43-101 – Standards of Disclosure for Mineral Projects ( <i>Regulation 43-101</i> in Québec)
NN	Nearest neighbour
NSR	Net smelter return
NSS	Non-sufficient sample
OGQ	Ordre des géologues du Québec (Québec order of geologists)
OIQ	Ordre des ingénieurs du Québec (Québec order of engineer)
OK	Ordinary kriging
oz	Troy ounce
P.Eng.	Professional engineer
P.Geo.	Professional geologist
ppb	Parts per billion
ppm	Parts per million
QA/QC	Quality assurance/quality control
QP	Qualified person (as defined in National Instrument 43-101)
RAB	Rotary air blast (drilling)
RC	Reverse circulation (drilling)
RES	Resistivity
ROM	Run of mine
RQD	Rock quality designation
SCC	Standards Council of Canada
SD	Standard deviation
SEG	Society of Economic Geologists

Abbreviation or Symbol	Unit or Term
t	Metric ton (tonne) (1,000 kg)
tpd	Metric tons per day
TSF	Tailings storage facility
TTG	Tonalite-trondhjemite-granodiorite
USD	American dollar
UTM	Universal Transverse Mercator (coordinate system)
VLF	Very low frequency
VMS	Volcanogenic massive sulphide
VTEM	Versatile time-domain electromagnetic

**Table 2.2 – Conversion factors for measurements**

Imperial Unit	Multiplied by	Metric Unit
1 inch	25.4	mm
1 foot	0.3048	m
1 acre	0.405	ha
1 ounce (troy)	31.1035	g
1 pound (avdp)	0.4535	kg
1 ton (short)	0.9072	t
1 ounce (troy) / ton (short)	34.2857	g/t

### 3. RELIANCE ON OTHER EXPERTS

This Technical Report has been prepared by InnovExplo at the request of the issuer.

The QPs relied on the following people or sources of information during the preparation of this Technical Report:

- The issuer supplied information about mining titles, option agreements, royalty agreements, environmental liabilities, permits. InnovExplo consulted the mining titles and their status, as well as any agreements and technical data supplied by the issuer (or its agents) and any available public sources of relevant technical information. InnovExplo is not qualified to express any legal opinion with respect to property titles, current ownership or possible litigation.
- Josiane Caron, P.Eng., from InnovExplo, provided the parameters for calculating the official cut-off grade for the mineral resource estimate. The parameters were established under the supervision of Patrick Frenette P.Eng.
- Antoine Berton, P.Eng., Ph.D., Senior Metallurgist of Soutex Inc. provides support and expertise for Item 24.
- Venetia Bodycomb, M.Sc., of Vee Geoservices, provided critical and linguistic editing for a draft version of the Technical Report.



## 4. PROPERTY DESCRIPTION AND LOCATION

### 4.1 Location

The Nampala gold mine is located in the Sikasso administrative region of the Republic of Mali, approximately 250 km southeast (335 km by road) of the capital city of Bamako (pop. 3,337,000 in 2016) and 62 km south-southwest of Sikasso (pop. 225,753 in 2009), the country's second largest city. The closest village is Niéna, 33 km northwest of the deposit (Figure 4.1).



**Figure 4.1 – Location of the Nampala gold mine in southern Mali, West Africa**

The coordinates of the approximate centroid of the Nampala Mine are 06°12'58"W and 11°09'17"N (NAD 83/UTM Zone 29U: 804074E and 1234517N). The nearest community is the village of Nampala, located about 2 km northwest of the Nampala Mine.

#### 4.1.1 Mining rights in Mali

The following discussion on the mining rights in the Republic of Mali was largely taken from the Mining Code (*Code Minier 2012, Loi No. 2012-015*) assented on January 26, 2012 (National Assembly, 2012) and in force on February 27, 2012.

In the Republic of Mali, all mineral rights are held by the State and are administered by the Direction Nationale de la Géologie et des Mines (“DNGM”) on behalf of the National Directorate for Hydrology and Energy.

A founding agreement termed a Mining Convention (*Convention d’Établissement*) is signed between a foreign or domestic mining company and the Malian government before exploration or mining commences. The agreement specifies all the conditions that will apply to exploration activities and, in the event of a discovery, mineral exploitation activities on the permitting area. The legal conditions include work obligations, technical reporting, taxes, duties, any duty-free arrangements and state equity participation.

A mining permit is required if an economically viable deposit is discovered on the property. The Mining Permit holder is required to create a Malian corporation whereby the Government of Mali is granted a non-dilutable 10% free-carried interest. The Malian government also reserves the right to purchase (for cash) an additional 10% participating interest in the project.

Financial conditions are outlined in the Mining Convention. In brief, for the first five (5) years of production, exploitation permit holders are free of corporate tax production, and thereafter the tax rate is 35% (or less when profit is reinvested in Mali). Up to 27.5% can be negotiated for a depletion (International Business Publications, 2013). Any equipment utilized on the project can be imported duty free during the exploration phase, and for the first three (3) years of the exploitation phase. A 3% mining royalty is payable to the government on the value of gold production, and there is a 3% special tax on certain products (*Impôt Spécial sur Certains Produits*) calculated on the turnover exclusive of VAT (currently at 18%).

#### 4.2 Exploitation and Exploration Permits

The exploration permit gives its holder the exclusive right to explore for such mineral substances on the land subject to the permit but does not entitle its holder to extract mineral substances, except for sampling and only in limited quantities. In order to mine mineral substances, the holder must obtain an exploitation permit. An exploration permit is valid for three (3) years and can be renewed twice for two (2) years each time.

Mineral substances can only be mined by means of an exploitation permit. The exploitation permit confers on its holder, within the limits of its perimeter and indefinitely in depth, the exclusive right of prospection, research and exploration of the mineral substances for which the exploration permit or the prospection authorization is valid and for which proof of a mineable deposit is provided to the Mining Administration by submitting a Feasibility Study approved by said Administration, as well as a Community Development Plan and a Closure Plan. It also

gives the holder the right to carry out any treatment and marketing of concentrates. A mining lease has an initial term of 30 years but may be renewed for 10 years until exhaustion. Included are non-participative shares of 10% non-dilutive granted to the State and 10% in cash participation.

#### 4.2.1 Exploration and mining title status

Mining title status for the Property was provided by Abdel Kader Maïga of Robex. InnovExplo verified the status of all mining titles using the Ministry of Mines of Mali Online Repository (<https://mali.revenuedev.org/dashboard>) and the DNGM website (<http://dngm.ml/>), where all licences are managed.

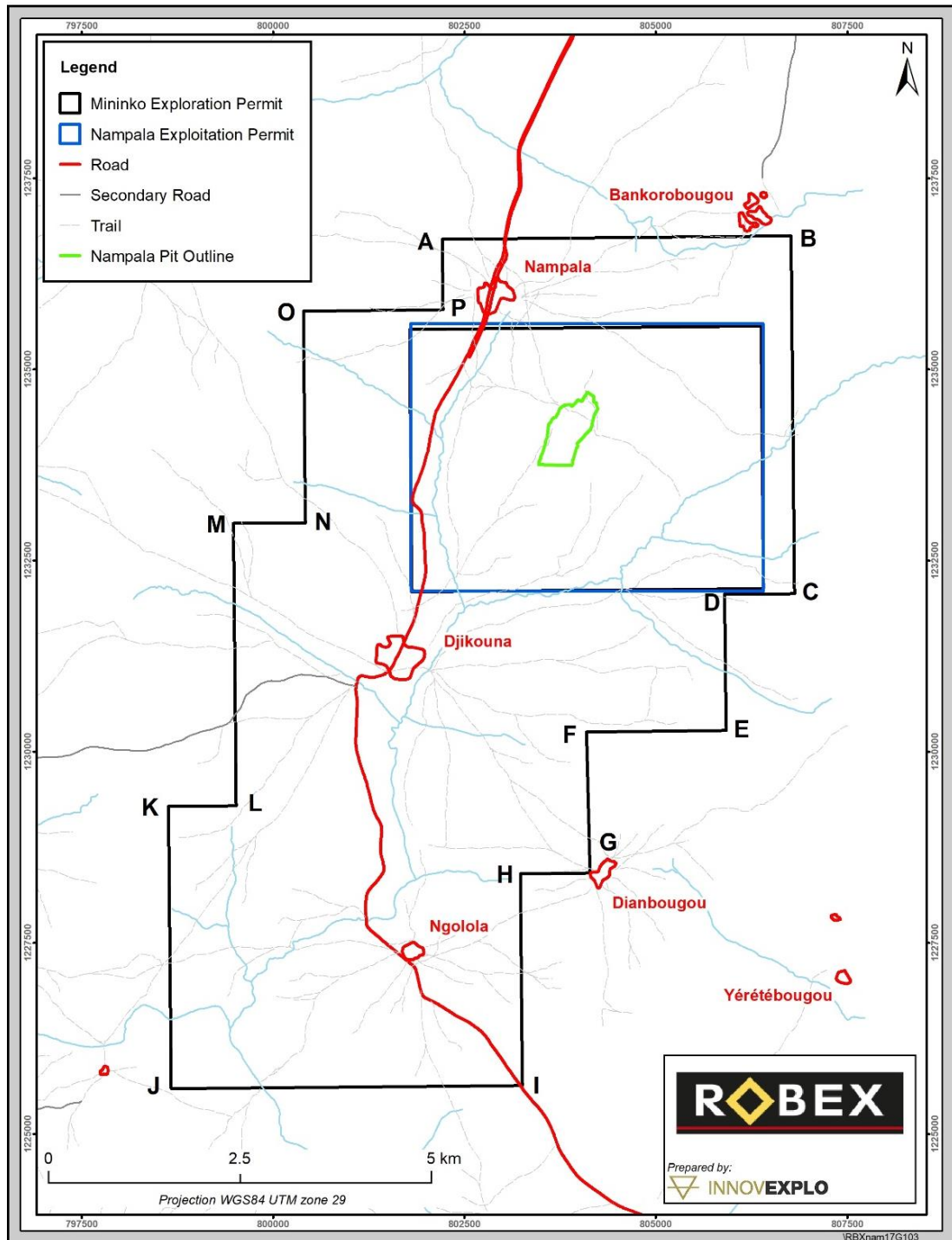
The current Property consists of two (2) permits: the Mininko exploration permit (*permis de recherche*) and the Nampala exploitation permit (*permis d'exploitation*). Permit reference numbers have changed over time under different orders (known as *décret* or *arrêté*) during the mining title renewal process and/or after changes were made to the permit boundaries. The original Mininko exploration permit covered a total area of 62.1 km<sup>2</sup> from which a portion was converted into an exploitation permit in March 2012 (the Nampala exploitation permit). The Nampala Permit was enlarged in November 2012 and now covers an area of 16.1 km<sup>2</sup> (including the Nampala gold mine). The current Mininko Permit covers the rest of the original property for a total area of 46.0 km<sup>2</sup> (Figure 4.2). A summary of the tenure information extracted from the Mali Online Repository on June 21, 2018 is presented in Table 4.1.

The Mininko and Nampala permits are legislated under *Arrêté No. 2012-0746/MM-SG* and *Décret No. 99-255/P-RM*, respectively. All permits are 100% owned by Robex. Expenditure obligations were met in 2012 and the DNGM has renewed the exploration permit twice since then. Renewed permits do not have any expenditure commitments. The permit documents are in good standing and legally allow Robex to perform exploration and mining work as long as they are renewed in accordance with government laws and requirements.

InnovExplo has not performed an independent verification of the legality of any underlying agreement(s) that may exist concerning the claims or other agreement(s) between third parties but has relied on information provided by the issuer who has validated the information provided.

**Table 4.1 – Property Tenure Location and Status (as of June 21, 2018)**

Permit Name	Current Permit No.	Last Order ( <i>Décret</i> or <i>Arrêté</i> )	Validity	Current Permit Period	Renewal Period Status	Surficial Area (km <sup>2</sup> )
<i>Permis d'exploitation de Nampala</i>	PE 2011/17	November 29, 2012 <i>Arrêté d'extension</i> No. 2012-684/PM-RM	30 years	21/03/2012 to 20/03/2042		16.1
<i>Permis de recherche de Mininko (2012)</i>	PR 10/479 2 Bis	August 8, 2017 <i>Arrêté</i> No. 2017-2607/MM-SG	2 years	01/03/2017 to 28/02/2019	2nd	46.0
				Total Area		62.1



**Figure 4.2 – Location map of the Property showing the Mininko and Nampala permits (black and blue outlines, respectively), the perimeter of the Nampala mine pit (green) and nearby villages (red)**

#### 4.2.2 Mininko Permit

The Mininko Permit is an exploration permit issued by the Government of Mali. It was first granted to Geoservices International Ltd (“GSI”) in November 2000. In 2012, Robex was granted an exploration permit after acquiring all the rights in the project. *Convention d’Établissement 20212-0746/MM-RM* (the “Convention”) for the Mininko Permit was signed on December 27, 2011, and the *Arrêté of Attribution No. 2012-0746/MM-SG* (the “Arrêté”) was signed on March 1, 2012.

Under the terms of the Convention:

- The Convention belongs to Robex Resources Mali SARL (a subsidiary of Robex) and is valid for exploration of gold and mineral substance of Group 2;
- Robex must obtain an exploration permit;
- Robex must establish an office in Mali including a liaison office in Bamako;
- Robex must present an exploration program each year;
- Robex must present exploration results;
- Permits are ruled by the legislation at the signature date; Robex can import and export materials and products.

The Arrêté specifies that the Permit is valid:

- For exploration of gold and mineral substances of Group 2;
- For 3 years, renewable twice for two (2) years each time.

Each year, Robex must file quarterly and annual reports with the DNGM, as well as an exploration program including a budget.

The current Mininko Permit reference number is PR 10/479 2 Bis (second renewal) and it expires on February 28, 2019. The boundaries of Permit PR 10/479 2 Bis are defined by the coordinates presented in Table 4.2.

**Table 4.2 – Mininko Permit boundaries (total surface area of 46.0 km<sup>2</sup>) (datum: Adindan, Mali)**

Points	UTM		Latitude/Longitude	
	Easting	Northing	Lat (North)	Long (West)
A	802 210	1 236 701	011° 10' 30"	060° 14' 00"
B	806 765	1 236 744	011° 10' 30"	060° 11' 30"
C	806 809	1 232 070	011° 07' 58"	060° 11' 30"
D	805 898	1 232 061	011° 07' 58"	060° 12' 00"
E	805 915	1 230 278	011° 07' 00"	060° 12' 00"
F	804 093	1 230 261	011° 07' 00"	060° 13' 00"
G	804 140	1 228 416	011° 06' 00"	060° 13' 00"
H	803 229	1 228 407	011° 06' 00"	060° 13' 29"
I	803 255	1 225 640	011° 04' 30"	060° 13' 29"

Points	UTM		Latitude/Longitude	
	Easting	Northing	Lat (North)	Long (West)
J	798 669	1 225 598	011° 04' 30"	060° 16' 00"
K	798 635	1 229 287	011° 06' 30"	060° 16' 00"
L	799 516	1 229 296	011° 06' 30"	060° 15' 31"
M	799 481	1 232 986	011° 08' 30"	060° 15' 31"
N	800 423	1 232 994	011° 08' 30"	060° 15' 00"
O	800 397	1 235 762	011° 10' 00"	060° 15' 00"
P	802 219	1 235 779	011° 10' 00"	060° 14' 00"

### 4.2.3 Nampala Permit

The Nampala Permit is an exploitation permit that was originally granted in 2012 to Robex following the December 15, 2012 feasibility study on the Nampala deposit. It is conciliated in a first *Décret No. 2012-190/PM-RM* dated March 21, 2012, which specified the following for the Permit PE 2011/17 – *Permis d'exploitation de Nampala*:

- valid for exploitation of gold and mineral substances of Group 2;
- valid for 30 years;
- falls under the obligations of Item 85 of *Décret No. 99-255/P-RM* concerning the reporting of work and production, dated September 15, 1999.

The Nampala exploitation permit originally covered an area of 5.36 km<sup>2</sup> (specified in a first *Décret* in March 2012) and was then extended to its current surface area of 16.1 km<sup>2</sup> (specified in a second *Décret* in November 2012). The current Nampala Permit with reference number PE 2011/17 expires on March 20, 2042 and is defined by the coordinates shown in Table 4.3 for a total surface area of 16.1 km<sup>2</sup>.

**Table 4.3 – Nampala Permit boundaries (total surface area of 16.1 km<sup>2</sup>) (datum: Adindan, Mali)**

Points	UTM		Latitude/Longitude	
	Easting	Northing	Lat (North)	Long (West)
A	801 800	1 235 600	011° 09' 50"	060° 14' 13"
B	806 400	1 235 600	011° 09' 50"	060° 11' 42"
C	806 400	1 232 100	011° 07' 58"	060° 11' 42"
D	801 800	1 232 100	011° 07' 58"	060° 14' 13"

### 4.3 Ownership History

The original Mininko exploration permit was granted to GSI on November 29, 2000 by the Government of Mali (*Décret No. 00-3318/MMEE-SG*). On March 8, 2005, Robex entered into an agreement to obtain an undivided interest of 51% in exchange for USD 450,000 and exploration investments of USD 1,440,000 over a 3-year period with an option to acquire the remaining 49% of the two properties – Mininko and

Kamasso – for USD 480,000. Robex’s acquisition of the remaining 49% of the properties was finalized in April 2007. The 100% interest is currently registered to the subsidiary Robex Resources Mali SARL.

The Mininko Exploration and Nampala Exploitation permits are legislated under *Arrêté No. 2012-0746/MM-SG* and *Décret No. 99-255/P-RM*. Both documents are in good standing and legally allow Robex to perform exploration and mining work as long as they are renewed in accordance with government laws and requirements.

#### 4.4 Royalties

Robex is the sole owner of the Property but GSI retains a 1% NSR royalty on any production from the entire Property.

Robex has a first right of refusal on any agreement GSI would consider regarding the NSR royalty.

#### 4.5 Constraints and Restrictions

The holder of an exploration permit (*permis de recherche*) is required to file quarterly and annual reports to the DNGM describing the nature and results of exploration performed during each calendar quarter and each year.

Surface rights can be held by the State, local authorities, or held by individuals. Holding an exploration permit does not automatically grant the owner surface access rights. Permission must be granted by the surface rights holder.

##### 4.5.1 Permits and Environmental Liabilities

All permits currently held by Robex are valid; however, the Mininko Permit expires in February 2019. Legal documentation regarding renewing or renouncing some of the exploration areas will need to be filed in 2018 (Table 4.1, Figure 4.2).

Cotton plantations and farming activities are common within the permit area and some harvesting grounds are located just beyond the fence around the mining operation. Up until now, there has not been any issues regarding local farming and harvesting practices even if exploration activities were conducted outside of the mine operation fence. In case of any disruptions, Robex has agreed to take the necessary actions to accommodate and compensate the local community if such a problem arises.

The author is not aware of any other significant factors or risk that may affect access, title, or the right or ability to perform work on the Property. No additional permits or government approvals are required to carry out the current work program.

The author is also not aware of any other existing environmental liabilities relating to the permits that comprise the Property.



## 5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

### 5.1 Accessibility

The Property is located in the Sikasso Region of southern Mali, approximately 335 km by road southeast of the capital Bamako and 100 km by road southwest of Sikasso, the country's second largest city (Figure 5.1). It can be easily accessed year-round by following the main paved highway connecting Bamako to Niéna (Route National 7 or RN 7) and then, 7 km past Niéna, turning right on a dirt road at Tiola village. From there, a 30-km drive on a secondary road passing through the village of Finkolo leads to the entrance of the Nampala mine site (Figure 5.1). According to Google Maps, the average travel time by car is 4.5 hours from Bamako. The Nampala Mine is approximately 2 km south-southeast of Nampala village.

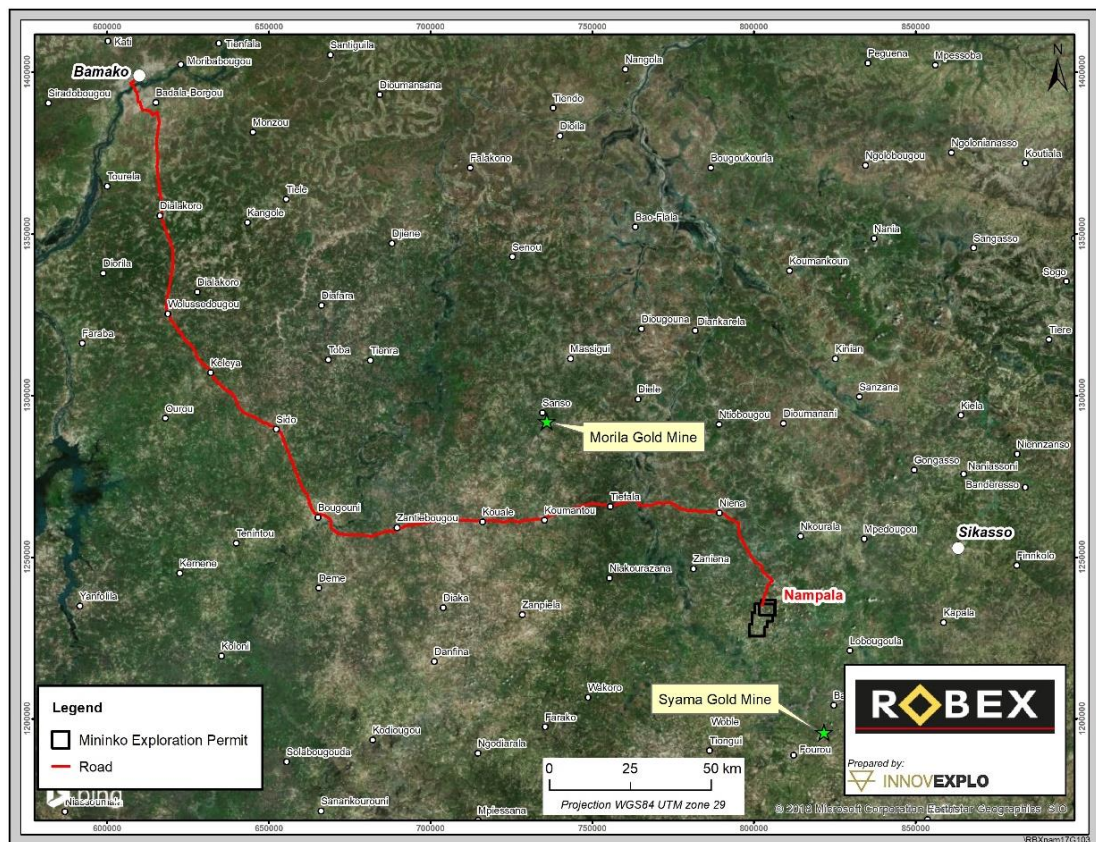


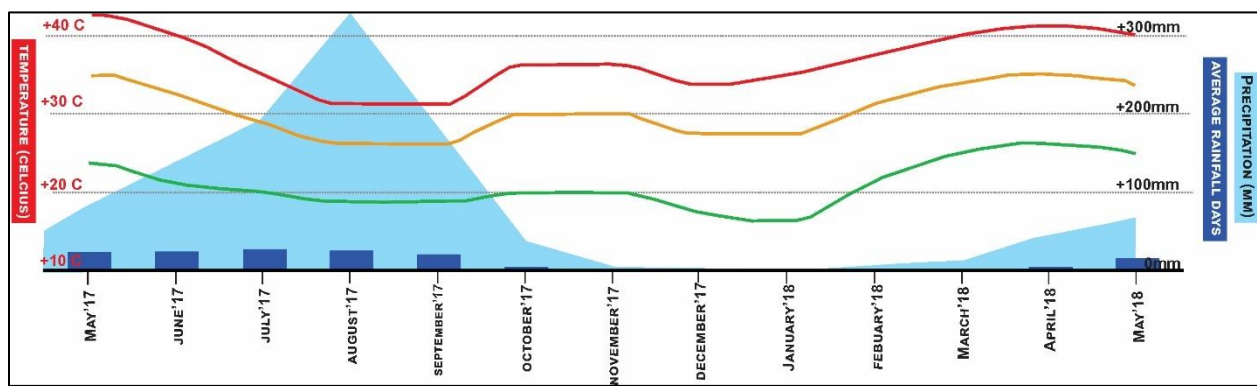
Figure 5.1 – Access to the Nampala gold mine and surrounding region

### 5.2 Climate

Based on the vegetation zones and bioclimatic domain map of Africa, the Property is located on the southern edge of the Sahel or sub-Saharan belt and is characterized by a subtropical to hot climate with distinct long dry seasons and shorter wet seasons. The rainy season extends from May to October, with an average rainfall of 800 to 1000 mm per annum, and a hot dry season from October to May. Climate data from

the nearest weather station in the town of Sikasso has an average rainfall of 1,120 mm per year, ranging from 1.1 mm in January up to 300 mm in August. Yearly temperatures are fairly consistent, only varying by 5° to 7°C on average. Daily average temperatures normally vary between 24°C at night and 40°C during the day from March to May and between 15°C at night and 32°C during the day the remaining months. Figure 5.2 shows the average rainfall and temperature in Nampala over a 1-year period between May 2017 and May 2018.

Exploration activity can be conducted year-round, although extra caution must be exercised on roads and while crossing streams during the wet season (June to September).



**Figure 5.2 – Climate chart for Nampala village, Sikasso region. (Data from worldweatheronline.com)**

### 5.3 Local Resources

Mali is a landlocked country and is accessed and serviced by air, road, and one main railway line running from Koulikoro (60 km east of Bamako) to the port city of Dakar in Senegal. Most freight (approximately 70%) is handled through the port of Abidjan, Republic of Côte d'Ivoire, and then transported by road.

Twenty-nine civil airports are present in the country, including eight with paved runways. Bamako has the longest runway and largest airport. The only airport in the Sikasso region is located at Sikasso (561 m in length and unpaved; 100 km northeast of Nampala). However, there are no scheduled flights between Sikasso and Bamako.

The main highway (RN 7) is paved and runs through the region between Bamako and Sikasso, although most of the major roads in the region are unpaved and the tertiary roads are poorly maintained. Bamako (pop. 3,337,000; 2016 census) and Sikasso (pop. 225,753; 2009 census) both have universities and modern amenities such as running water, sewers and hospitals. The inhabitants in the Property area are concentrated in small hamlets and villages where a subsistence lifestyle is evident with limited available power and water. Agriculture is the main industry in the country, with livestock and gold washing (“*orpaillage*”) as secondary. Potable water is available from bored wells and surface water is available year-round through tributary drainages, but only in small quantities during the dry season. There is no regional power plant. Community health centres (CSCOMs) in the nearby villages of Finkolo

and Djikouna provide healthcare, whereas food and some specialized services are available primarily in Sikasso. Due to Mali's long mining history, skilled local labour is available in the country for most aspects of any mining operation; however, specialized personnel in mine development are not available in the local area and generally come from Bamako.

## 5.4 Infrastructure

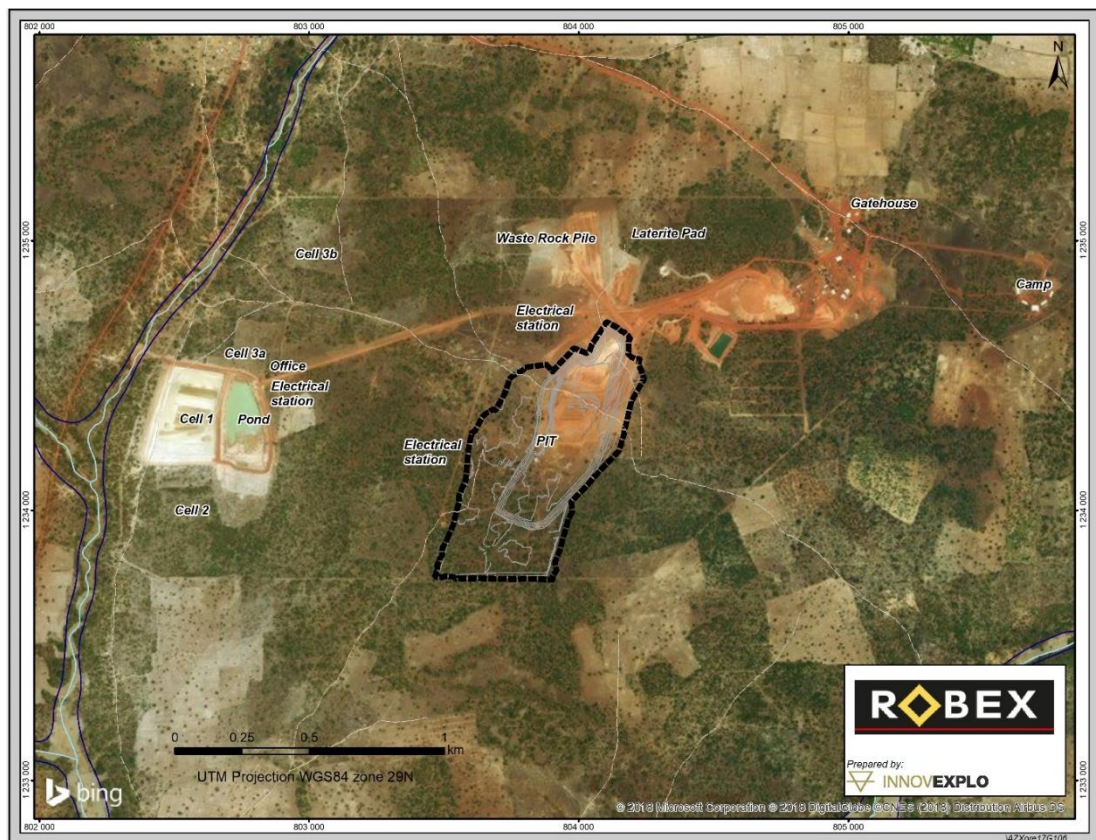
As the Nampala Mine is an active mining operation, several typical mine and milling facilities have been erected on the site. Figure 5.3 shows an aerial view of the mine site and Figure 5.4, Figure 5.5 and Figure 5.6 provide a detailed look at the mine infrastructure.

Notable infrastructure components include:

- Lodging area for security forces outside the gatehouse at the mine entry point (capacity of 20 people);
- Primary camp including sturdy brick structures for kitchen, laundry room, refectory and 5 living quarters (52-person capacity);
- Analytical laboratory (maximum capacity of 300 samples per day);
- Power plant generating approximately 2.5 MW;
- Buffer tank to supply the mill with water in case of emergency;
- Tailings pond of approximately 680,000 m<sup>2</sup>;
- Retention pond equipped with a pumping station located next to the tailings pond;
- Fully stocked warehouse for various parts and equipment as well as a warehouse for reagents;
- 10 x 40-ft containers for offices, administration, a mechanical shop and lodging; 4 x 20-ft containers for lodging and sanitary accommodations;
- Smaller kitchen area for mill employees;
- Hangar (14.8 m x 12.2 m) built with containers and steel sheets for roofing;
- 3 structures for electrical and compressor rooms as well as offices and a sampling area for the CIL circuit;
- Septic tanks and sewer system;
- Medical clinic;
- Mosque;
- Sturdy fence around the Nampala mine site;
- Well-maintained lateritic/saprolitic roads across the whole property for haulage and access purposes;
- Several pumping stations/water wells for camp and mining requirements;
- Core shack (equipped with a core cutting area) and a lay-down area for core racks and RC field duplicates;
- Typical CIL mill concentrator;
- 2 temporary maintenance and storage areas for heavy duty equipment (contractors);
- Fuel tanks and a refueling bay station;
- Helicopter landing area;
- Containers and sheds for equipment storage;

- Open pit mining operation with an approximate dimension of 1,200 m x 600 m x 60 m;
- Unlined waste stockpile;
- Marginal ore-grade stockpile and run of mine (ROM) stockpile;
- Welding and carpenter shop.

Infrastructure in the area also includes a 561-m-long unpaved runway at Sikasso and a fully functional property-wide mobile network and internet access.



**Figure 5.3 – Areal view of the Nampala mine and infrastructure**

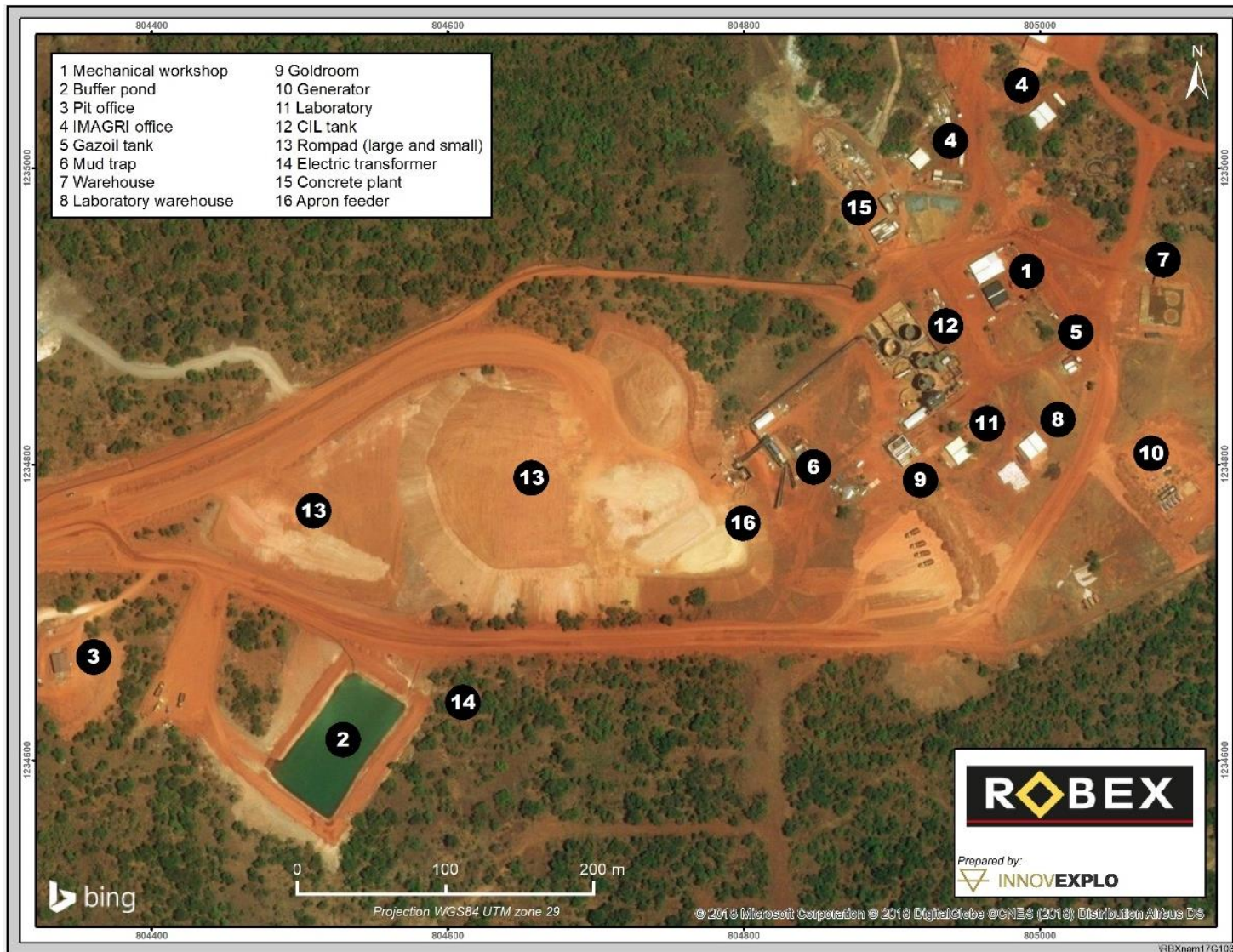


Figure 5.4 – Close-up of the Nampala Mine and infrastructure (source: Robex website July 2018)



**Figure 5.5 – Photo of the Nampala mining infrastructure (source: Robex website July 2018)**



**Figure 5.6 – Photo of the Nampala open pit in production, looking west (photo taken during April 2017 site visit)**

## 5.5 Physiography

The topography is generally flat with an average altitude of 320 to 350 masl. Only a few lateritic plateaus with abrupt drops rise 20 to 30 m above the surrounding land. The drainage is mainly to the south.

The vegetation is generally composed of open grasslands (savannah-type) with arable fields, and large areas of open woodland consisting of small trees and shrubs (acacia, shea, ficus, baobab). Larger trees are found closer to drainages areas (palm trees and liana) and flood plains (bombax, mango trees). There is very little local wildlife, but the region has warthogs, monkeys, antelopes and snakes (vipers, mambas) (Marchand, 2011; and Figure 5.7).



**Figure 5.7 – Typical physiography of the area (photo taken during April 2017 site visit)**

## 5.6 Community

The area around the Property is populated by a few small villages and hamlets. The population lives mainly on gold panning, agriculture and animal breeding. Transportation services are almost non-existent.

Farmers' fields and plantations are common on the Property and Robex negotiates with local communities on the ways and means to address major concerns, including health and hygiene, education, access to drinking water, and proper compensation

for expropriated land. In addition, being a dominantly Muslim country, special consideration is taken in regard to important dates and times of the year, as well as working hours throughout the week to accommodate the communities' religious customs.

Before Robex acquired the Property, several information meetings were held with local communities to detail the nature of the work and the benefits for the communities, and to address any concerns. Robex continues to hold various meetings and information sessions with representatives and members of local communities. In addition, their assistance was sought to supply labour for the exploration and mining work.

These meetings proved invaluable because they fostered an amicable and respectful relationship between Robex and the local people, and they established the proper channel of communication and authority for each local area in which the issuer intends to work.



## 6. HISTORY

The discovery of a gold anomaly over the Nampala deposit was first noted in 1981 during a regional geochemical soil sampling program (1,000 m x 200 m grid spacing) and then confirmed in 1985 by a follow-up geochemical soil sampling survey (tighter grid spacing). Since then, more than 66,000 m have been drilled in the area by different owners and through various techniques (RAB, RC, AC, DDH; see Table 2.1 for abbreviations). Metallurgical samples were first tested in 2006 to evaluate gold recovery and six historical resource estimates have been published since then (2006, 2007, 2009, 2010, 2011 and 2012). A feasibility study was also completed by the consulting firm Bumigeme Inc. in 2011. The Nampala open pit mine is currently in operation.

### 6.1 1964 to 1965 – Exploration Program (SONAREM)

An exploration program was carried out in southern Mali by SONAREM, Algeria's State Mining and Mineral Monopoly, in collaboration with the Soviet Union. The program targeted alluvial gold deposits (Golder et al., 1965). According to the 2012 technical report prepared for Robex, this early campaign delimited *“a large anomalous area, with mineralized bedrock potential, between Dekorobougou and Koba to the north, Banifing to the south, and the Bagoé River to the west”*.

### 6.2 1980 to 1991 – Exploration Program (UNDP)

Between 1980 and 1991, the United Nations Development Programme (“UNDP”) funded an exploration program in the Bagoé River region (Bagoé Gold Project, MLI/79/003) to follow up on gold anomalies identified by SONAREM in 1965.

**1981:** The UNDP conducted a regional soil survey at a grid spacing of 1,000 m x 200 m to define a gold anomaly with a surface area of 16 km<sup>2</sup> (50 ppb to 140 ppb Au).

**1982:** A second more detailed soil sampling program was realized using a 200 m x 200 m sampling grid over the anomaly. This survey defined a larger anomaly to the south of the village of Nampala. Later that same year, a tighter 50 m x 50 m grid was defined over an area of 1 km<sup>2</sup>, in the area with the highest gold values.

**1983:** A VLF survey was conducted over the anomaly, revealing numerous N-S structures.

**1985:** The Nampala gold anomaly was confirmed in 1985 after a verification soil sampling survey with a tight grid was conducted over the anomalous area identified by the original 1,000 m x 200 m regional soil sampling survey of 1981.

**1987–1988:** An additional soil sampling survey at 1,000 m x 200 m was conducted to the south, east and north of the original Nampala anomaly. At the same time, 22 old “wells” were rehabilitated to better understand the host rock. The “wells” were logged and sampled. In addition, three (3) DDH were completed.

**1988:** Two vertical core holes were drilled: Nams2 and Nams3 to depths of 86.9 m and 136.2 m, respectively.

**1990 to 1991:** Three (3) vertical holes were drilled.

### **6.3 1993 to 1994 – Broken Hills Proprietary Company Limited**

Broken Hills Proprietary Company Limited (“BHP”) drilled 109 auger holes spaced 20 m apart on 4 drill lines spaced 200 m apart for a total of 1,333 m with an average depth of 12.2 m per hole. The holes were terminated after obtaining 5 m in saprolite. Systematic sampling was done on 2-m composite intervals; however, only the first two surface samples and the last two saprolite samples were analyzed for gold.

A VLF-EM survey was completed over the auger-drilled lines as well as two lines to the north.

BHP estimated a resource of 2.3 t of gold in three separate zones in the upper 20 m of the saprolite profile at a grade of about 2.0 g/t Au, but then abandoned the property without further work (source BHP Mali cited in Marchand, 2012).

*This “resource” is historical in nature and should not be relied upon. It is unlikely it conforms to NI 43-101 requirements or CIM Definition Standards, and it has not been verified to determine its relevance or reliability. It is included in this section for illustrative purposes only and should not be disclosed out of context.*

### **6.4 2000 to 2001 – Exploration Program (Geoservices International Ltd and Newmont Mining Corporation)**

In mid-2000, Geoservices International Ltd of Bamako, Mali (“GSI”) acquired the original Mininko exploitation permit and undertook a work compilation study and reconnaissance program for the area. In December 2000, Newmont Mining Corporation (“Newmont”) evaluated the earlier exploration work done on the Property and concluded that further drilling was warranted at Nampala. On November 26, 2001, Newmont entered into an agreement with GSI to allow Newmont to fund and carry out future exploration work on the exploration permit held by GSI. According to the terms of the agreement, Newmont would form a new company called Geoservices Resources Limited (“GSR”), which would become the holder of the Mininko Permit but would be controlled by Newmont through a shareholder’s agreement in return for consideration paid by Newmont to GSI.

Preliminary reconnaissance was first conducted on the permit, followed by geophysical surveys (ground magnetics) and geochemical soil sampling. The results of the ground magnetic survey indicated that it was a suitable technique to resolve (map) geological features, and if further work was to be done on the Mininko licence, an aeromagnetic survey would be most useful. The results of the soil sampling program re-confirmed anomalies detected by earlier surveys on the N’Golola and N’Teguella prospects (on the Mininko Permit) as well as the large anomaly at Nampala.

At Nampala, 18,000 m of shallow RAB and AC drilling confirmed the presence of a zone of sporadic, low-grade gold mineralization in saprolite clays over an area of 100,000 m<sup>2</sup> and to a depth of 40 m. The RAB holes failed to confirm the “gold resource” indicated by the BHP auger traverse results. The drilling was systematically set at a grid spacing of 200 x 50 m or 400 m x 100 m over an area of 5 km<sup>2</sup>.

At the N’Golola Prospect, 2,000 m of RAB drilling confirmed the existence of several isolated narrow zones of gold values above 1 g/t Au, hosted in saprolite clays. These occurrences are scattered over an area of 2 km<sup>2</sup>.

Table 6.1 shows the 2001 drilling statistics from the RAB/AC campaign.

**Table 6.1 – Drilling statistics from the 2001 RAB/AC drilling campaign**

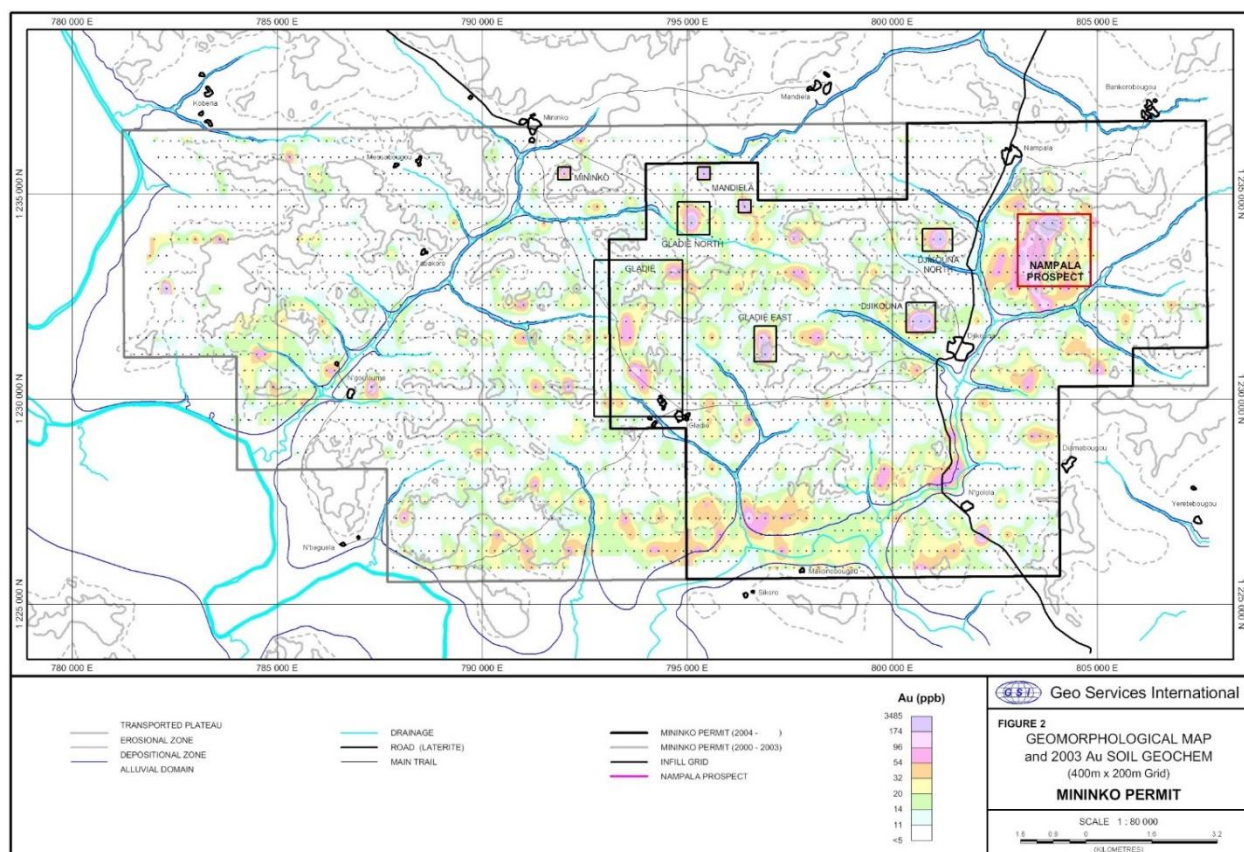
	Nampala Target	N’Golola Target	Total (m)
Metres drilled (RAB+AC)	15,098	4,315	19,413
Total RAB metres drilled	14,264	3,110	17,374
Total AC metres drilled	834	1,205	2,039
Total number of holes (RAB+AC)	355	130	485
Number of RAB holes	338	112	450
Number of AC holes	17	18	35

Despite enlarging the area of potential mineralization at Nampala, GSR’s RAB drilling markedly reduced the deposit average grade.

## 6.5 2003 to 2004 – Geoservices International and Golden Star Resources

Between October 2003 and December 2004, a comprehensive exploration program was performed to re-evaluate the historical resources on the Property. The program, described below, was managed by GSI in joint venture with Golden Star Resources.

In October 2003, a geomorphological map was prepared using aerial and Landsat photos in order to have an accurate map of the regolith (Figure 6.1). A month later in November, a detailed soil sampling program was carried out at a grid of 400 m x 200 m over the entire Property (2,544 samples including QA/QC). This was followed by a short campaign of infill soil sampling on anomalous areas (262 samples including QA/QC). Two trenches with a total linear length of 150 m were excavated on the main Gladié anomaly with no significant results.



**Figure 6.1 – Geomorphological map showing the results of the 2003 gold-in-soil geochemistry survey (Source: Geoservices International, 2003)**

Two successive drilling campaigns were completed from January to March 2004. A total of 4,715 m was drilled in 36 holes of which 4,189 m were drilled in 31 RC holes and 526 m in 5 DDH. For the RC samples, a first pass analysis was done using 3-m composites. All intervals grading over 200 ppb Au were reanalyzed on 1-m intervals.

In March 2004, Sagax Maghreb S.A. conducted a ground IP survey over a 1.2 km x 1.0 km area covering the main Nampala Prospect. The survey successfully highlighted lithological boundaries and large-scale structural/alteration patterns around the current Nampala deposit.

In August 2004, RSG Global Consulting Pty Ltd prepared a resource estimate (preliminary and non-compliant 43-101) using the results of the 5,000 m drilled on the Nampala prospect area between 2002 and 2004. This historical resource for the Nampala deposit represents 534,000 ounces of gold at a grade slightly over 1.0 g/t Au with a cut-off of 0.6 g/t Au (RSG Global 2004 cited in Marchand, 2012).

***This “resource” is historical in nature and should not be relied upon. It is unlikely it conforms to NI 43-101 requirements or CIM Definition Standards, and it has not been verified to determine its relevance or reliability. It is included in this section for illustrative purposes only and should not be disclosed out of context.***

## **6.6 2005 to 2008 – GSI in Collaboration with Robex Resources Inc.**

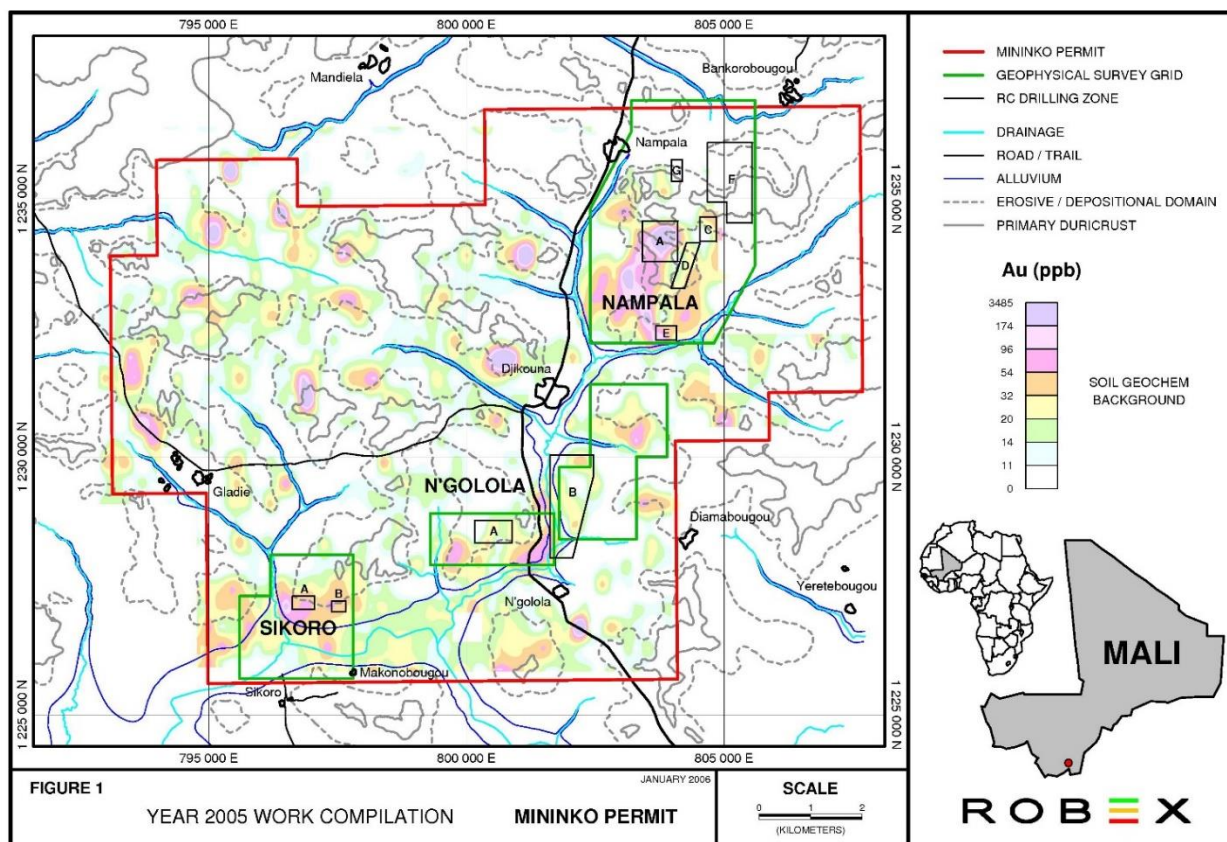
On March 8, 2005, Robex entered into an agreement with GSI to obtain an undivided interest of 51% for cash considerations and investments of USD 1,440,000 over a 3-year period. The bulk of the investment was to be focused on the Central Nampala Prospect in the form of drilling campaigns that would increase the confidence level of the existing resources.

Following the interpretation of the regional airborne Mag-EM radiometric survey, a 25-m spaced IP survey was completed over the Nampala geochemical anomaly and the Sikoro Zone.

Two drilling campaigns ran from June 2005 to January 2006 in collaboration with Robex. A total of 9,665 m was drilled, including 9,037 m in 86 RC/AC holes and 628 m in 2 DDH.

Based on the positive results, another drilling campaign was realized. In October and November 2006, a total of 6,221 m was drilled in 56 holes: 3,748 m in 34 holes on the Nampala Zone; 1,135 m in 10 holes on the Mininko NW Zone (in the northwest corner of the permit) and 1,338 m in 12 holes on the N'Golola Zone.

A summary of the 2005-2006 exploration program results can be found in Figure 6.2.



**Figure 6.2 – Results of the 2005-2006 exploration program and interpreted anomalies (Source: Robex, 2005)**

In January 2007, as a result of the previous work, a technical report (NI 43-101 compliant) was prepared by RSG Global Consulting (Wolfe, 2007). The report presented a new resource estimate for the Nampala deposit of 760,000 oz of gold at an average grade of 0.9 g/t Au and a cut-off grade of 0.5 g/t Au. The result came from the combined sum of three mineralized zones. Areas 100 and 200 contain 689,000 oz at an average grade of 0.9 g/t Au and Zone 300 contains 71,000 oz at an average grade of 0.6 g/t. At the time of the estimate, the combined sum of the resources in zones 100, 200 and 300 were classified as Inferred based on the confidence level of the key parameters considered in the estimate.

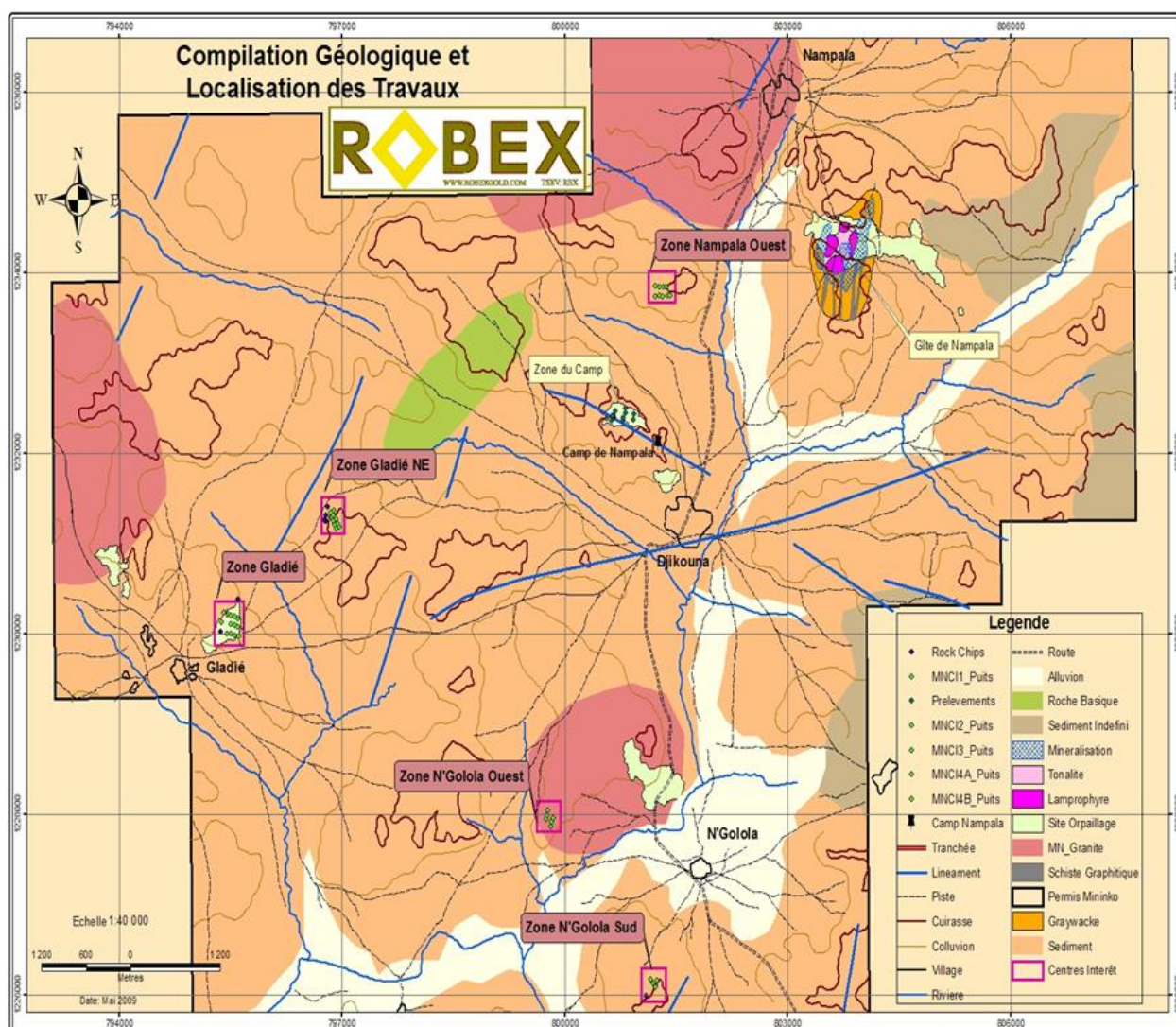
***This NI 43-101 compliant resource is historical in nature and should not be relied upon. It has not been verified to determine its relevance or reliability. It is included in this section for illustrative purposes only and should not be disclosed out of context.***

Following the resource estimate, a new deep-drilling campaign was completed in November 2007 for a total of 916 m in 3 DDH.

## 6.7 2009 to 2012 – Robex Resources Inc.

In 2009, at the request of Robex, Genivar Inc. (now WSP Global) re-compiled RSG's resource model and proposed drill holes at a grid spacing of 25 m x 25 m over the saprolite portion of the Nampala deposit.

Between February and April 2009, Robex conducted field work to acquire more data on five (5) gold zones within the exploration permit (Figure 6.3). A total of 255 samples were collected.



**Figure 6.3 – Location of the five zones of interest in 2009 and the nature of the field work (Source: Robex, 2009)**

In late 2009, a total of 8,208 m was drilled in 119 RC holes.

In 2010, 73 RC/AC holes were drilled for a total of 6,500 m on Zone 100 of the Nampala deposit. In addition, as part of the feasibility study, Robex contracted local

companies to conduct topographic surveys and environmental studies and to drill wells for potable water. Metallurgical testing also commenced to determine the best gold extraction method.

In 2010, an internal addendum to RSG's 2007 resource estimate included the 2009 drilling campaigns (Marchand, 2010). The result of this historical estimate indicated that Zone 100 of the Nampala deposit extends from surface to a depth of 85 m and contains 7.6 Mt at a grade of 1 g/t Au, representing 244,045 oz of gold at a cut-off grade of 0.4 g/t Au.

***This "resource" is historical in nature and should not be relied upon. It is unlikely it conforms to NI 43-101 requirements or CIM Definition Standards, and it has not been verified to determine its relevance or reliability. It is included in this section for illustrative purposes only and should not be disclosed out of context.***

In 2011, two phases of drilling were completed. Phase I comprised diamond drilling from March to July in the area around the Nampala deposit. The aim was to verify the results of previous RC holes by duplicating a few drill collar locations and to verify the continuity of mineralization at depth. Both objectives were attained. A total of 5,000 m was drilled in 19 holes: 8 (2,080 m) were twinned holes, 4 (386 m) were for geotechnical studies, and the other 7 (2,534 m) were to verify the mineralization. All holes were drilled east at 090° with a dip of 50°. The best intercepts at least 5 m long are presented in Table 6.2.

**Table 6.2 – Best results of the Phase I and II 2011 drilling program (≥5 m intervals)**

Hole ID	Interval		Length (m)	Au (g/t)
	From (m)	To (m)		
Mn2011dd001	90	120	30	0.74
Mn2011dd002	70	89	19	1.12
Mn2011dd003	11	108	97	1.20
Mn2011dd004	31	39	8	1.12
Mn2011dd004	57	82	25	1.40
Mn2011dd004	101	108	7	2.41
Mn2011dd004	121	134	13	2.25
Mn2011dd005	36	44	8	0.98
Mn2011dd005	49	57	8	0.96
Mn2011dd005	61	103	42	1.00
Mn2011dd006	13	52	39	1.16
Mn2011dd006	68	84	16	0.81
Mn2011dd006	96	106	10	0.92
Mn2011dd006	145	166	21	0.51
Mn2011dd006	183	193	10	1.49
Mn2011dd006	198	204	6	1.10
Mn2011dd007	39	93	54	0.91
Mn2011dd007	147	152	5	0.97



Hole ID	Interval		Length (m)	Au (g/t)
	From (m)	To (m)		
Mn2011dd007	163	176	13	1.09
Mn2011dd007	198	208	10	1.06
Mn2011dd007	214	225	11	0.97
Mn2011dd008	17	60	43	1.05
Mn2011dd008	140	174	34	0.95
Mn2011dd009	278	301	23	1.06
including	278	289	11	1.55
Mn2011dd009	331	338	7	1.84
Mn2011dd015	28.5	46	17.5	1.32
including	28.5	42	13.5	1.74
Mn2011dd015	112	127	8	0.86
Mn2011dd016	164	205	41	1.01
including	164	173	9	1.11
including	179	185	6	1.62
including	193	205	12	1.54
Mn2011dd017	43	48	5	1.53
Mn2011dd018	20	27	7	2.48
Mn2011dd018	278	283	5	0.93

Phase II comprised RC/AC drilling in December 2011 on the southern extension of the Nampala deposit. A total of 2,819 m was drilled in 33 holes. Of the 33 holes, 19 intersected gold mineralization associated with quartz veining in greywacke.

A second addendum to RSG's 2007 resource estimate (Marchand, 2011; used in the 43-101 compliant report of Baril et al., 2011) included the 2009-2010 drilling data and the information on the significant mineralization identified in the sulphide domain (transition zone and fresh rock). The oxide resource was evaluated at 19.9 Mt at a grade of 0.82 g/t (Measured+Indicated) corresponding to 524,000 oz of gold, and 2.4 Mt at a grade of 0.63 g/t Au corresponding to 49,000 oz of gold, both at a cut-off grade of 0.3 g/t Au. The sulphide resource below the oxide resource was evaluated at 7.3 Mt at a grade of 0.81 g/t (Measured+Indicated) corresponding to 189,500 oz of gold, and 24.8 Mt at a grade of 0.96 g/t Au (Inferred) corresponding to 766,400 oz, both at a cut-off grade of 0.3 g/t Au (Table 6.3). The parameters for the resource evaluation include the following:

- 3-m vertical intervals;
- Voronoi (polygonal) method for calculating the surface influence of the assays;
- 10-m benches in the oxide material and 20-m benches in the underlying sulphide material;
- A density of 2.6 g/cm<sup>3</sup> for all the weathering profiles and lithologies;
- Cut-off grade of 0.3 g/t Au.

**Table 6.3 – Nampala 2011 mineral resource estimate**

Mineralization	Category	Interval	Million tonnes	Grade (g/t)	Thousand ounces
Oxide 290 to 360	Measured	290 to 360	11.68.3	0.86	322
	Indicated	290 to 360		0.76	202
	Total	290 to 360	19.90	0.82	524
Sulphide -60 to 290	Measured	-60 to 290	0.8	0.92	23
	Indicated	-60 to 290	6.5	0.79	167
	Total	-60 to 290	7.30	0.81	190
Total	Measured+Indicated	-60 to 360	27.20	0.82	714
Oxide	Inferred	290 to 360	2.40	0.63	49
Sulphide	Inferred	-60 to 360	24.80	0.96	766
Total	Inferred	-60 to 360	27.20	0.93	815

***This NI 43-101 compliant resource is historical in nature and should not be relied upon. It has not been verified to determine its relevance or reliability. It is included in this section for illustrative purposes only and should not be disclosed out of context.***

At the end of 2011, a 43-101 compliant feasibility study on the Nampala gold deposit was produced by Bumigeme Inc. at the request of Robex (Baril et al., 2011). The main objective of the report was to establish, apart from the mineral reserves, the viability of the project in regard to its technical, economical, environmental and social aspects. The study showed that the Nampala deposit, which is characterized by a low waste-to-ore ratio, would be economically viable.

The reserve amounted to 17.4 Mt at 0.70 g/t Au (390,500 oz) of which 12.2 Mt are in the proven category (70%) and 5.2 Mt in the probable category (30%) based on a cut-off grade of 0.30 g/t Au. The waste-to-ore ratio is 0.55 t waste to 1.0 t of ore (Table 6.4). The mineral reserves are based on the 2011 measured and indicated resources. The historical reserve estimate is based on an operational pit that includes a roadway system, berms and minimal working space. The economic pit limits were established using the “EPIT Optimizer” module of the MineSight™ mine planning software. The calculation of the economic pit was based on the following assumptions: a gold price of USD 1,250/oz, an in-plant recovery of 88% and a total processing and mining cost of 13.00 USD/tonne.

**Table 6.4 – Nampala 2011 mineral reserve estimate**

Category	Reserve (t)	Au (g/t)
Proven	1,275,000	0.77
Probable	5,176,000	0.55
Total	17,351,000	0.7
Stripping Ratio	0.55	

***This NI 43-101 compliant reserve is historical in nature and should not be relied upon. It has not been verified to determine its relevance or reliability. It is included in this section for illustrative purposes only and should not be disclosed out of context.***

In 2012, an RC/AC drilling program over three Nampala areas totalled 11,960 m (Nampala South: 72 holes for 5,996 m; Nampala East: 43 holes for 3,682 m). Some condemnation drilling was also carried out (28 holes for 2,282 m). All holes completed and available by the close-out date of the 2012 resource database (exact date unknown) were included in the 43-101 compliant mineral resource estimate (Marchand, 2012) (Figure 6.4). Assay results were still pending for 2,730 m of drilling at the close-out date.

In March 2012, a 43-101 compliant resource estimate was prepared for the southern extension of the Nampala deposit (Marchand, 2012).

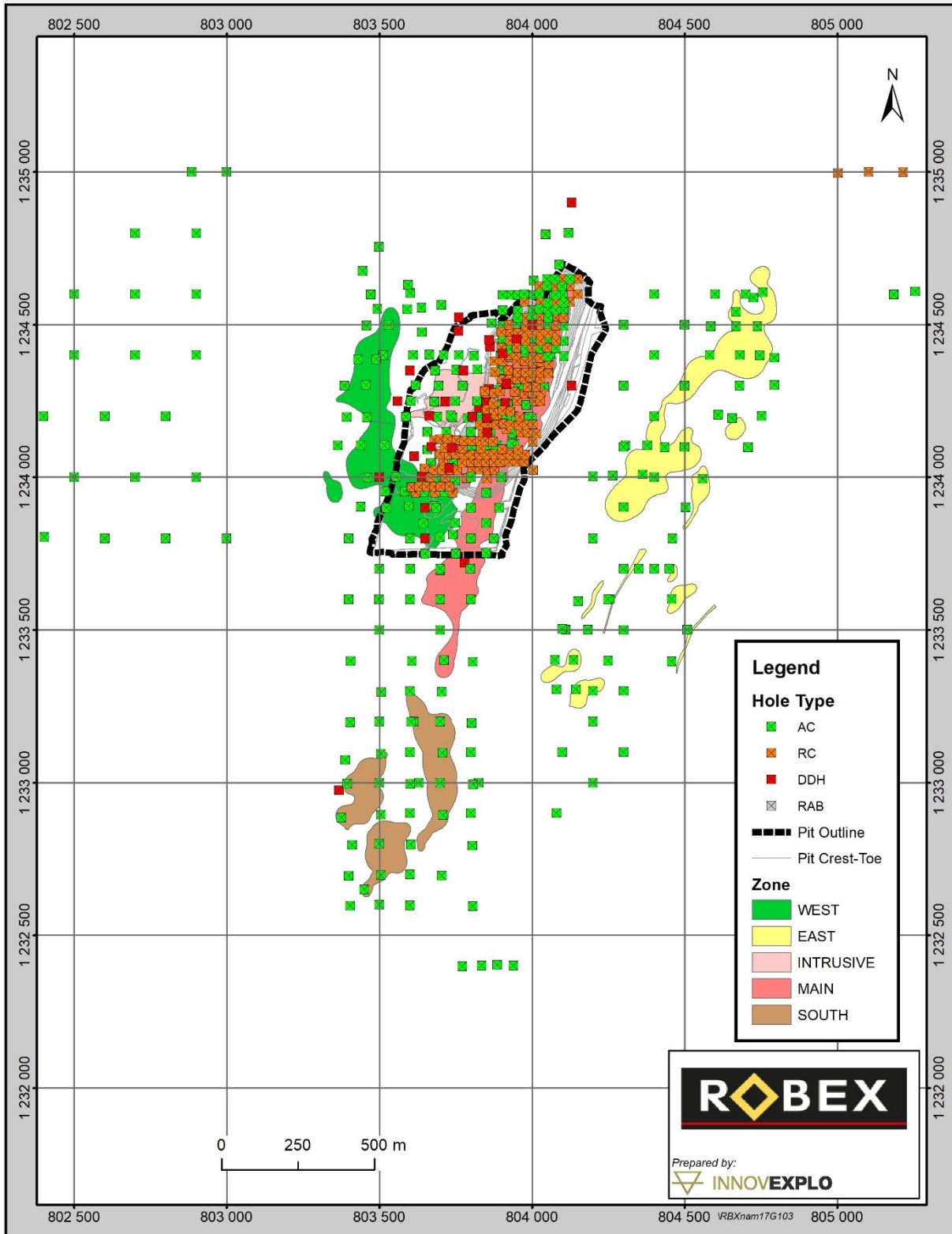
The Inferred resource was estimated at 11 Mt at 0.74 g/t Au representing 261,400 oz at a cut-off grade of 0.4 g/t Au (Table 6.5). The parameters included the following:

- Calculations from the floor of the oxide mineralization;
- Unitary block model method (Voxel);
- Grade interpolation by ID2;
- 1 m sample intervals;
- Block dimension 10 x 10 x 10 m;
- Search ellipsoid: azimuth 030°, 150 x 100 x 100 m;
- Density of 2.6 g/cm<sup>3</sup> for all weathering profiles and lithologies;
- Cut-off grade of 0.4 g/t Au.

**Table 6.5 – Nampala 2012 mineral resource estimate**

Type	Category	Cut-off grade (g/t Au)	Tonnage (Mt)	Grade (g/t)	Gold (koz)
Oxide	Inferred	>0.3	13.6	0.66	291
Oxide (base case)	Inferred	>0.4	11.0	0.74	261
Oxide	Inferred	>1.0	1.5	1.08	51

***This NI 43-101 compliant reserve is historical in nature and should not be relied upon. It has not been verified to determine its relevance or reliability. It is included in this section for illustrative purposes only and should not be disclosed out of context.***



**Figure 6.4 – Location of drill hole collars and type of drilling included in the 2012 MRE**

## **7. GEOLOGICAL SETTING AND MINERALIZATION**

### **7.1 Regional Geology**

The Property is located in southern Mali within the Leo-Man Shield of the West African Craton. At a regional scale, the Property is hosted within the Birimian Supergroup of the Baoulé-Mossi Domain. Gold mineralization in southern Mali is restricted to the rocks of the Birimian Supergroup of this domain. The Birimian Supergroup is also a significant host for gold mineralization in Burkina Faso, Côte Ivoire and Ghana.

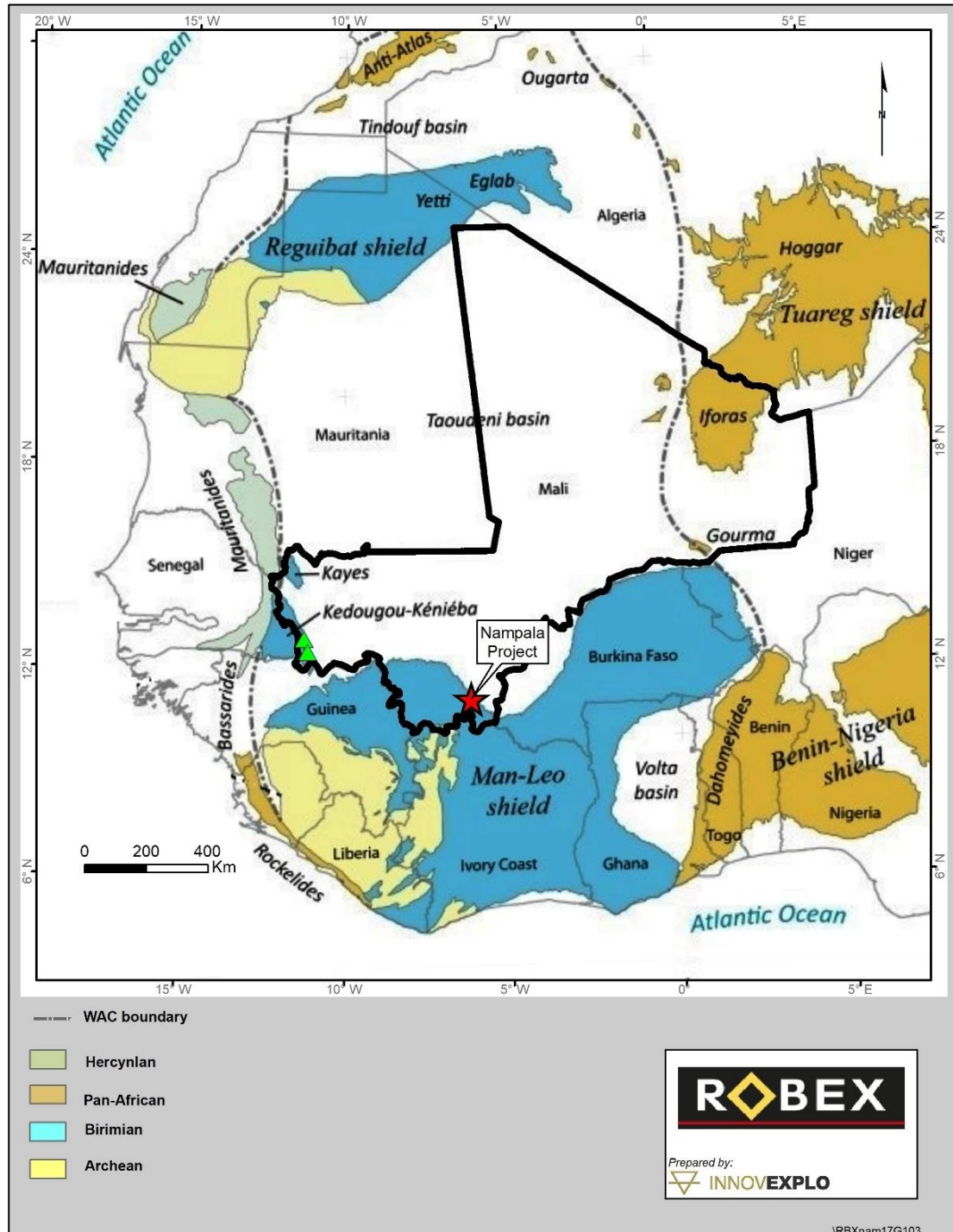
#### **7.1.1 West African Craton**

The geology of northwestern Africa is dominated by the Precambrian West African Craton which comprises major shields (or rises) that represent the Archean and Paleoproterozoic basements: the northern Reguibat Shield, the southern Leo-Man Shield, the smaller west-central Kedougou-Kenieba and Kays inliers, and to the east the Tuareg and Benin Nigerian shields (Figure 7.1; Schluter, 2006, Black, 1980; Villeneuve and Cornée, 1994). In general, the western portions of the Reguibat Shield and the Leo-Man Shield are mainly composed of Archean rocks, whereas the rocks to the east are predominantly Paleoproterozoic (Black et al., 1980; Abouchami et al., 1990). These shields are entirely bounded by Pan-African and Hercynian belts separated along a central axis by the Neoproterozoic to Phanerozoic Taoudeni Basin (Abouchami et al., 1990). This sedimentary basin is the dominant feature in central Mali.

#### **7.1.2 Leo-Man Shield**

The southern portion of the West African Craton, referred to as the Leo-Man Shield, underlies the West African countries of Ghana, Niger, Togo, Burkina Faso, Mali, Côte Ivoire, Guinea, Liberia and Sierra Leone. The Leo-Man Shield hosts multiple world-renowned gold and base metal deposits throughout Guinea, Mali, Ghana and Burkina Faso (Parra-Avila et al., 2016). The Leo-Man Shield is divided into a western part corresponding to the Kénéma-Man Domain (dominated by Archean granitoids) and into an eastern part corresponding to the Baoulé-Mossi Domain (alternance of Paleoproterozoic Birimian greenstone and granitoid belts) (Boher et al., 1992) (Figure 7.2 and Figure 7.3).

The Archean basement rocks are the result of two orogenic cycles: Leonian (ca. 3.0-2.9 Ga) and Liberian (ca. 2.8-2.7 Ga). The Archean domains were overprinted by medium-grade to high-grade metamorphism (amphibolite-granulite facies) with the dominant rock type consisting of TTG gneiss and younger greenstone belts, later intruded by granitoid bodies (Black et al., 1980). The Archean and Paleoproterozoic rocks are separated by a major shear zone, the Sassandra Fault to the east that extends across Liberia and Côte d'Ivoire (Boher et al., 1992).



**Figure 7.1 – Geological map showing major tectonic units of the West African Craton and location of the Nampala Mine (modified from several sources, after Grenholm, 2014)**

### 7.1.3 Baoulé-Mossi Domain

The Baoulé-Mossi Domain consists of three main alternating lithological or litho-structural assemblages: 1) N-S volcano-sedimentary belts (greenstone belts); 2) granitoid rocks that intrude the volcano-sedimentary units (~2,090 Ma); and 3) late dioritic to granodioritic (2,074 Ma) plugs and dykes. The last event in the region ( $\pm 250$  Ma) consist in a swarm of NNE-trending mafic dykes. The majority of West African gold deposits are hosted within Birimian volcano-sedimentary belts of the Baoulé-Mossi Domain.

The Baoulé-Mossi Domain is dominated by the 2.2-2.0 Ga Birimian Supergroup (Boher et al., 1992). The Birimian Supergroup represents a juvenile crust without any contribution from the surrounding Archean continents (Abouchami et al., 1990; Pawlig et al., 2006). In general, the Birimian Supergroup comprises narrow volcano-sedimentary basins or volcanic belts (e.g. Yanfolila, Morila and Syama greenstone belts); granitoid-TTG terranes; and younger sedimentary basins. Tholeiitic basalt flows, turbidites and shale-sandstone sequences are dominant in the belts and basins (Bessoles, 1977; Lompo, 2009).

The Baoulé-Mossi Domain has been regionally metamorphosed to greenschist-amphibolite facies during the 2.1-2.0 Ga Eburnean Orogeny. The Eburnean Orogeny comprises polyphase deformation and metamorphism that produced folding and multiple generations of shear zones and faults. Deformation was also accompanied by the intrusion of multiple generations of granitoids affecting all lithological units. Late (<2150 Ma) deformation within the Baoulé-Mossi Domain is characterized by E-W to NW-SE compression, whereas early (<2150 Ma) deformation phases show more dominant N-S or NE-SW compression (Feybesse et al., 2006). The metamorphic grade of the volcanic belts tends to be higher than that of the sedimentary sequences. Locally, higher-grade metamorphism (amphibolite to granulite facies) has been documented as contact metamorphism around granitoid intrusions (Hirdes et al., 1993).

### 7.1.4 Birimian Supergroup

The Birimian Supergroup corresponds to the volcano-sedimentary belts (greenstone belts) of the Baoulé-Mossi Domain. Stratigraphically, the Birimian Supergroup begins with a thick lower tholeiitic mafic volcanic and intrusive sequence, overlain by volcanic, volcanoclastic and sedimentary rocks, turbidite sequences, mudstones and carbonates. Pre-, syn- and post-tectonic granitoid rocks separate and locally intrude the greenstone belts.

More specifically in southern Mali, three major volcano-sedimentary belts are documented in the Birimian Supergroup. These are, from west to east, the Yanfolilia Belt and the Siguiri Basin, the Morila Belt, the Mandiela Basin, the Syama Belt and the Kadiola Basin. Two major shear zones cross-cut the Birimian terranes: the Siekerole Shear Zone (SSZ) along the eastern margin of the Yanfolilia Belt, and the Benafin Shear Zone (BSZ) separating the Morila and Syama belts (Figure 7.4 and Figure 7.5).

The Yanfolilia Belt, situated near the Guinea-Mali border, is divided into eastern and western portions by the SSZ. The belt comprises arc-related volcanic suites known as

the Nani Volcanic Formation and reworked greywacke sequences. The Nani Volcanic Formation is dominated by coarse-grained to megacrystic tholeiitic intermediate to mafic volcanic rocks interlayered with strongly deformed porphyritic rhyodacitic lavas, pyroclastic flows and breccias (Parra-Avila et al., 2016).

The Morila Belt is situated within the major granitic intrusive complex of the Bougouni region which dominates south-central Mali, namely the Massigui and Doubakoro granites. The Birimian terranes within the complex are composed of mafic to intermediate lavas locally interbedded with volcano-sedimentary rocks (Parra-Avila et al., 2016).

The Syama Belt is situated on the border between Mali and Burkina Faso in the south-east. The belt is comprised of interlayered intermediate to mafic lavas, greywackes and argillites (Olson et al., 1992). The stratigraphy of the Syama Belt is similar to that of the Yanfolila Belt but it is strongly folded and generally overturned.

Three main deformation events influenced the geology of southern Mali during the Eburnean Orogeny (Liégeois et al., 1991): an early phase (D1) of crustal thickening through thrusting, including NNW trending/plunging folds, and two subsequent phases (D2-D3) characterized by extensive NNE-striking subvertical structures such as the BSZ near the Morila Mine.



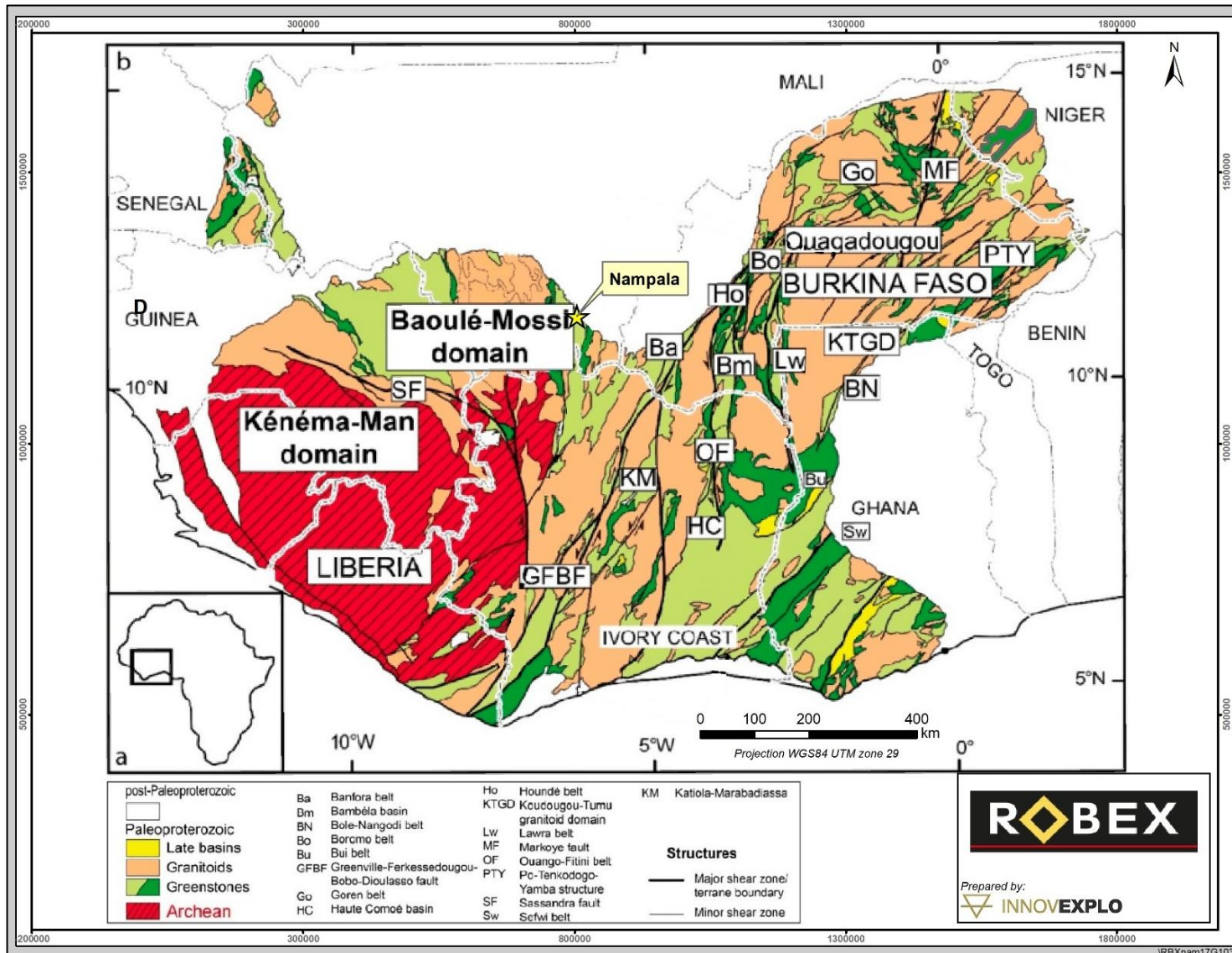


Figure 7.2 – Simplified geological map of the Leo-Man Shield, modified after Milési et al. (2004.)



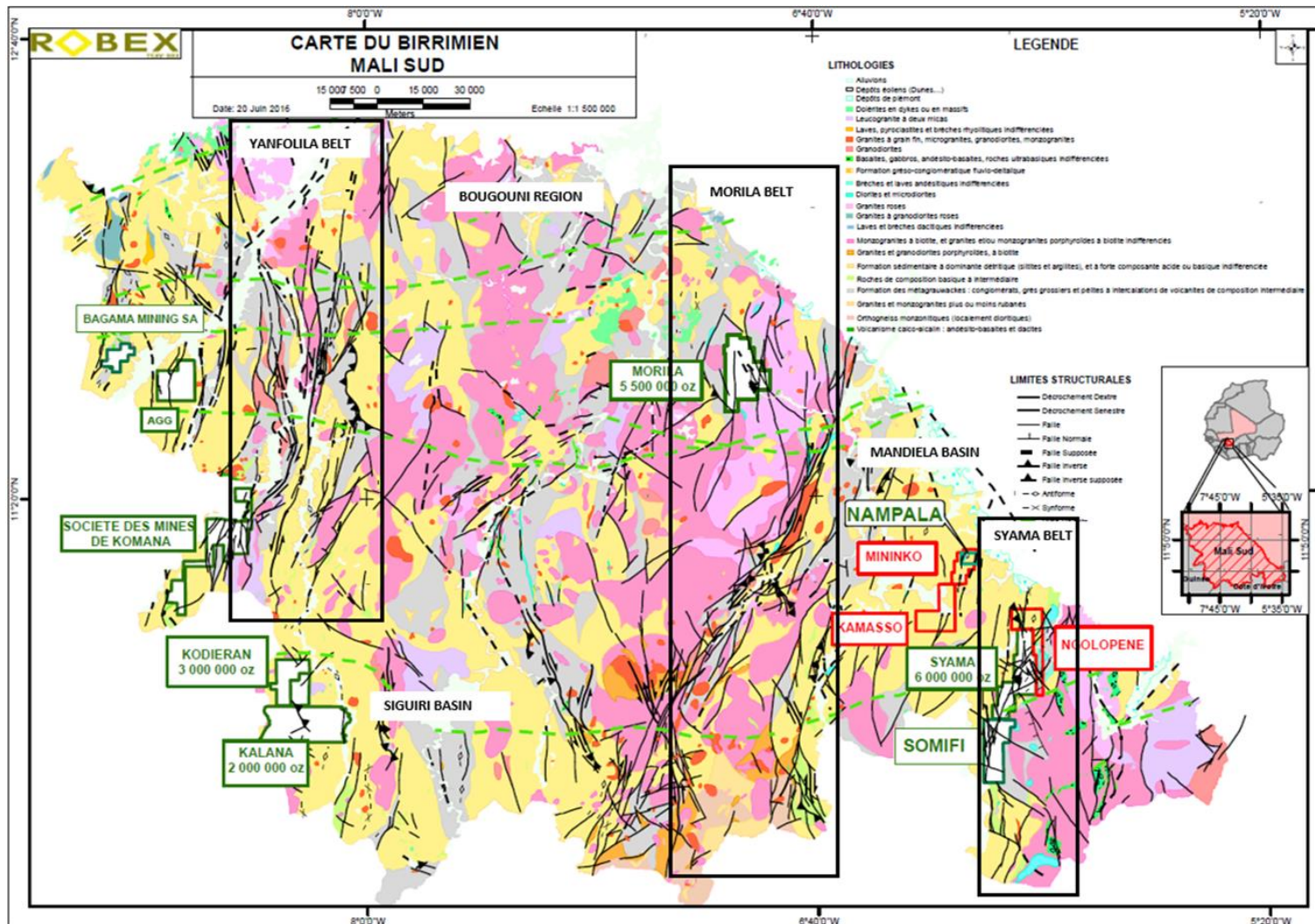
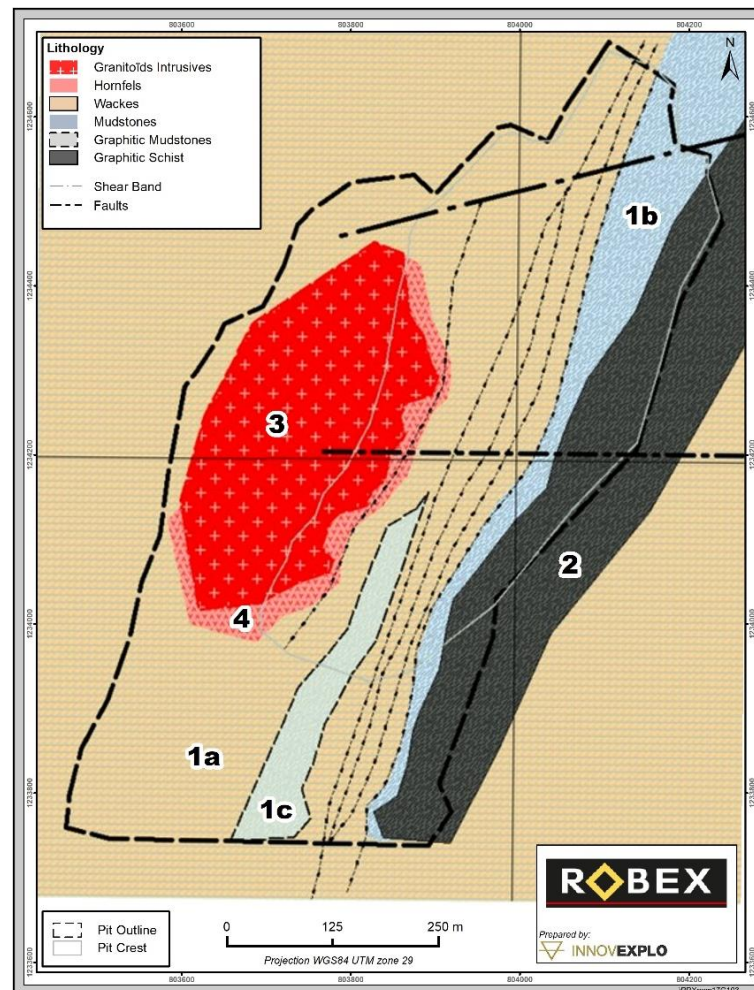


Figure 7.4 – Birimian Geology of southern Mali (1:5,000,000) (source: Feybesse et al., 2006ab)



**Figure 7.5 – Plan view of the lithological sequence (mine nomenclature in legend) in the mine pit: (1) Turbidites composed of (a) wacke (fine- to medium-grained greywacke interlaminated with siltstone), (b) shale and siltstone (“mudstone”), and (c) graphitic shale (“graphitic mudstone”); (2) Laminated graphitic shale (“graphitic schist”); (3) Granitoid (porphyritic granodiorite-diorite); (4) Hornfels (hornfelsed flysch: contact metamorphic aureole)**

## 7.2 Nampala Mine and Property Geology

The geological and structural setting documented at the Nampala Mine is representative of the entire Property. The main lithological units and marker horizon (e.g. graphitic shale) extend southward from the Nampala Permit onto the Mininko Permit and even beyond the southwestern limit of the adjacent Kamasso Permit.

The Nampala Mine and other gold zones located on the Property are hosted in turbidites of the Bagoé Formation flysch sequences belonging to the Birimian Supergroup. The Bagoé Formation is oriented NNE that extends several hundred kilometres into Côte d’Ivoire and disappears under the Taoudeni Basin to the north. In general, the turbidites

are intruded by large porphyritic intermediate stocks, thin gabbroic dykes and sills, and late felsic dykes and sills.

At Nampala, the turbidites that constitute the Main and East gold zones strike NNE and dip steeply to the ESE. They are composed of thick sequences of interbedded greywacke, siltstone and shale (also described in the mine nomenclature or the literature as mudstone, claystone, schist, phyllite or argillite). A thick unit of graphitic shale separates the turbidites of the Main and East zones. This unit is not anomalous in gold and shows up as a distinct strong MAG/IP conductor on geophysical maps. The turbidites hosting the East Zone are locally interbedded with different types of sandstones (arenite, sandstone and lesser gritstone in the field nomenclature). The gritstones are siliceous sandstones that contain subrounded coarse-grained lithic fragments of graphitic phyllite suspended in a coarse sandy matrix of quartz and feldspar. The turbidite package of the Main Zone is intruded by large plugs or stocks of porphyritic intermediate composition as well as gabbroic or late felsic dykes and sills. So far, the only intrusives observed in the East Zone area have been thin gabbroic dykes and sills.

Pervasive and strong saprolitic weathering is evident on the Property. All lithologies are affected by strong to intense saprolite weathering to depths below 100 m before transitioning rapidly into unaltered fresh rock. Overlying the saprolite, a thick residual lateritic soil and duricrust covers the region and can reach thicknesses of more than 10 m. Outcrops are rare due to the thick lateritic and alluvial cover.

### **7.2.1 Lithology (Nampala Main and East zones)**

The lithologies, mineralization, alteration and structures in the Main and East zones were interpreted from rock exposures in the mine pit and in road cuts, from drill core and cuttings, from airborne MAG and ground MAG-IP geophysical surveys, and from geochemical surveys. In addition, frequent visits to the mine pit provided additional documentation in freshly excavated grade-control trenches up to 2 m deep. These trenches proved valuable by providing a general sense of the spatial geometry of the geology, structures, mineralization styles and hydrothermal alteration in the saprolitic weathering profile. Because the main priority was the 2017-2018 drilling program, the trenches were not subjected to recent systematic geological or structural mapping; in addition, few to no outcrops were available for mapping.

The sedimentary rock nomenclature in this section is based on the Pettijohn et al. (1972) classification of siliciclastic rocks.

A section through the pit from west to east (starting 200 m west of the pit and ending at the easternmost limit of the East Zone) reveals a large porphyritic granodiorite/diorite body (450 m x 600 m) intruding low-energy turbidites. The turbidites trend NNE-SSW and dip steeply to the SE. A thermo-metamorphic contact aureole is expressed as a well-developed system of fractures and tension veins along the inside border of the intrusive to the west, and as a hornfelsed rim in the sediments to the east where the effects extend 10 m to 20 m into the host rock before abruptly transitioning into regular turbidite. The sedimentary units close to the intrusive are locally intruded by late decimetric to metric subaphanitic and porphyritic gabbro or diabase dykes and sills.

The turbidites are composed of fine- to medium-grained greywackes interlaminated with siltstone and shale. The greywacke is the dominant sedimentary rock on the Property and represents roughly 75-80% of the material observed in the pit. Medium- to coarse-grained sandstone and arenite beds are also found within the greywacke, as well as a gold-barren graphitic shale bed 50 to 60 m thick, located roughly in the middle of the pit in the southern part of the deposit. This latter bed pinches out going north, disappearing through the northern edge of the pit.

To the east of the flysch package, a 200-m-thick unit of intensely graphitic, laminated shale is easily distinguished by its darker colour and graphitic texture. This barren bed starts just beyond the eastern wall of the pit and defines the limit between the Main and East zones. It is characterized by a strong geophysical IP conductor and a low magnetic signature that can be traced continuously beyond the northeastern limit of the Property and beyond the southwestern limit of the Kamasso Permit. The East Zone is characterized by a turbiditic sequence similar to the one encountered in the Nampala deposit. These rocks are intruded by three gabbroic to dioritic intrusives displaying amphiboles and biotite in a medium- to coarse-grained matrix. Many of the mineralized intercepts, strong hydrothermal alteration envelopes and silica-flooded hydraulic breccias are found in their vicinity. The intrusives have not yet been well defined but are known to be smaller in volume than the main intrusive body west of the Nampala pit.

The Main and East zones have similar weathering profiles. The area is covered by a very thick layer of ferricrete (iron-rich duricrust) overlain by a thin horizon of colluvial material, both of which overlie saprolitic sediments and intrusive rocks. The duricrust is up to 10 m thick, whereas laterized rock typically reaches depths of 4 to 8 m and saprolitic weathering profiles have been observed as deep as 100 m.

### **7.2.1.1 Metasedimentary rocks (turbidite sequence)**

#### **Shale/Siltstone**

This rock package is composed of alternating beds and laminations of light bluish shale (mudstone, Figure 7.6) to light yellowish-gray shale and siltstone (Figure 7.7). The dominant composition of this rock is a combination of clay and silt that contain traces of very fine subrounded sand grains of plagioclase and quartz. The fresh rock displays a light bluish tint with yellowish-white hues caused by the presence of plagioclase lathes suspended in a clay matrix. Graphite has been observed in places.



**Figure 7.6 – Shale bed interlaminated with siltstone, between greywacke beds**



**Figure 7.7 – Interbedded siltstones and fine-grained greywackes**

### **Greywacke**

Greywacke is the dominant rock type on the Property. In general, the wackes are composed of a matrix of light blueish-gray clay and silt supporting fine to medium, well-rounded sands with medium sphericity. The latter are present in greater proportions than in the siltstones. The fine to medium sands represent over 15% of the rock material. The quartz and feldspar sands and occasional small quartz clasts are generally subrounded to well-rounded with medium sphericity. The sands are mostly composed of feldspar (plagioclase laths) and to a lesser extent a mixture of quartz and feldspar. On occasion, some wacke horizons contain very coarse sand grains to silt-size clasts that are subrounded to subangular. The wackes in the East Zone locally contain small subrounded lithic fragments.

Although some upward fining has been observed in isolated laminae and beds, no definitive polarity of the stratification has yet been defined.

In fresh rock, the sediment colour can vary from greyish blue with light greenish hues to dark grey. These colours seem to be associated with the presence of pervasive chlorite and graphite in various concentrations.



### **Arenite/Sandstone**

Arenites in the sequence, which are composed of various proportions of quartz and feldspar, have the same dominantly plagioclase composition as the wackes. The clast/matrix ratio classifies this rock in the feldspathic arenitic field according to Pettijohn et al. (1972).

The rocks are composed of at least 15% very coarse sand and small clasts, up to 3 mm across, cemented in a clay or silty clay matrix. The clast composition is dominated by subrounded feldspar laths (possibly plagioclase sands) and lesser amounts of rounded quartz-rich coarse sand. In the Nampala pit, the arenites are exclusively of quartz-feldspar composition, while in the East Zone, some arenite stone beds contain subcentimetre, subrounded graphitic lithic fragments and mudstone or shale clast fragments. The latter are matrix-supported but are occasionally clast-supported.

A few isolated, very thin beds of quartz arenite cemented with saccharoidal silica were observed in drill core through fresh rock. It was unclear if the saccharoidal texture was the product of hydrothermal silica flooding that underwent deformation or if it was the result of carbonate leaching.

### **Graphitic shale**

Graphitic shale, also reported as graphitic “schist”, “argillite” or “mudstone”, is characterized by abundant black (graphitic) laminations. Thick dark graphitic beds are interlaminated with shale horizons (Figure 7.8). This lithology is often strongly to intensely sheared and there is a strong presence of late cubic pyrite porphyroblasts (>1 cm) that are slightly skewed, partially rotated and smeared along interbed and lamination planes. In the saprolite horizon, this lithology can be recognized by cubic hematitic vugs (remnants of cubic pyrite), intense hematite staining of the clays, tight foliation/parting and intense black (graphitic) colouration. In general, this unit is typical of the classic Birimian graphitic rocks documented along several thrust faults in the Ashanti trend.



**Figure 7.8 – Graphitic shale on the west wall in the mine pit**

This unit can reach thicknesses in excess of tens of metres and has a strong conductive signature (IP, MAG) that can be traced at the regional scale, passing from NNW to SSE through the Property and the full length of the adjacent Kamasso Permit to the south. This lithological unit represents the litho-structural division between the mine pit and the East Zone.

#### **7.2.1.2 Intrusive rocks**

Three types of intrusive rock were observed in drill core from the Property and in the mine pit: granodiorite-diorite to tonalite intrusives, mafic intrusives, and leucocratic felsic to intermediate intrusives.

### **Granodiorite-diorite to tonalite**

Granodiorite-diorite to tonalite are the dominant types of intrusive rock on the Property. A significant intrusive stock of that type is located immediately west of the Nampala pit. The rock is composed of equigranular leucocratic plagioclase feldspar, coarse crystalline quartz, and accessory minerals such as biotite, amphibole and chlorite. This rock is generally porphyritic where plagioclase and quartz porphyritic crystals are cemented in an equigranular phaneritic matrix.

### **Mafic intrusives**

Mafic intrusives are represented by centimetric, decimetric or metric dykes and sills of gabbroic composition injected in the turbidites (Figure 7.9). These subaphanitic- to medium-grained intrusives are dominantly dark brown to dark grey. Some of the gabbroic intrusives show an inner chill margin characterized by disseminated micro-porphyritic automorphic off-white plagioclase laths set in an aphanitic mafic matrix (Figure 7.10). This texture evolves inwards into automorphic equigranular phenocrysts measuring 1 mm to 3 mm across. Some parts of the intrusives are of dioritic composition.



**Figure 7.9 – Gabbroic intrusive (A) in contact with turbidite (B) (hornfelsed flysch).**



**Figure 7.10 – Porphyritic gabbroic dyke displaying kaolinized tabular subautomorphic plagioclase**

### **Leucocratic felsic intrusive**

Leucocratic quartz-feldspar dykes and sills cut the mineralization and appears to be post- to syn-mineralization (Figure 7.11). A few examples of these injections have been observed in saprolite next to the main granodioritic intrusive on the west wall of the mine pit. The intrusives are mostly whitish-pink, very rich in silica/quartz, and have a coarse saccharoidal texture. Their widths range from 10 to 60 cm but they are not well understood as only two or three occurrences are observed in the same area and their orientations are different. They may be the result of granodiorite intrusions along planes of weakness. They occur as narrow isolated dykes in the hornfels rim.



**Figure 7.11 – Late felsic intrusive dyke intruding fine-grained gabbroic rock**

### 7.2.2 Mineralized zones

Gold mineralization is primarily hosted in competent coarse-grained sedimentary rock where brittle fracturation, openings and veining occurred. Gold is associated to structurally controlled tension quartz vein systems and stockworks developed in the brittle fractures and in areas of increased porosity as a result of the deformation of the more competent coarse-grained greywacke, siliceous sandstone and sandstone.

Shear zones are developed in the more ductile adjacent (or locally intercalated) shales (particularly the graphitic shale) and are commonly barren. Some narrow NNE-trending subvertical shear corridors are exposed in the pit from north to south and have been traced nearly continuously to the southernmost drill hole of the 2017-2018 drilling program.

Some anomalous gold values can also be found locally in the chill margins or along the contact of the intermediate intrusives. Local brittle deformation seems to have created space for tension quartz veins to penetrate the fringe of the stock and this seems to be confirmed by resistivity and conductivity geophysical maps which display what seem to be a slight NE/SW and NW/SE fracture pattern. This corresponds to the general orientation of the mineralization in the mine where mineralized domains are oriented 020°N and are controlled laterally by subvertical structures and stratigraphy. Within these delineations, as many as five generations of veins are observed and there seems to be a global plunge of 25-30° to the SW as well as the SE where flatter undulating quartz veins are noted. The mineralization type found at the Main and East zones is structurally controlled sediment-hosted orogenic gold affected by late intrusives. In both

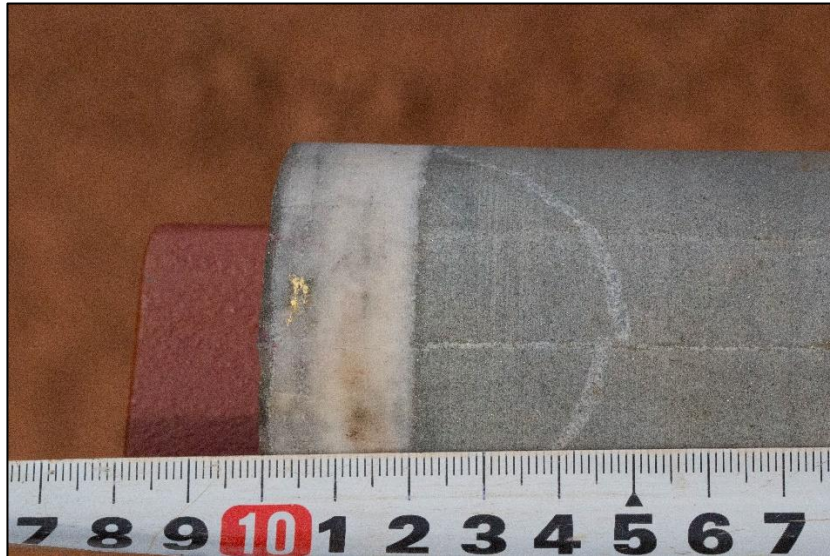
zones, the mineralized quartz veins have propagated into the more competent coarse-grained waxes, sandstones and arenites affected by brittle deformation. Through rheological contrasts between the different sediments, the plastic planar shear slipping along the ductile and less permeable siltstones and mudstones resulted in the propagation of interplanar shear bands, the brittle fracturing of arenitic rocks, the opening of tension jogs and the formation of dilation joints. As a result, quartz vein propagation and hydrothermal alteration of the protolith was favourable in the more porous sandstones and arenitic rocks. Hydrothermal alteration and quartz vein development patterns follow the structural corridors, filling extension gashes and jogs along shear corridors in the sediments and along the intrusives.

The dominant hydrothermal alteration in both zones is characterized by pervasive carbonatization-silicification and pyrite-arsenopyrite disseminations accompanied by chlorite and clay minerals (kaolinitization). The hydrothermal alteration displays outward zonation around quartz veins. The bulk of the sulphides occur as widespread disseminations of fine (submillimetre) pyrite and arsenopyrite. They are found within silicate-carbonate alteration rims in the wall rock around individual quartz veins, within quartz-carbonate veins. The degree of silicification and arsenopyrite concentrations appear to be slightly higher in the East Zone than in the Main Zone.

Being a low-grade deposit, visible gold was rarely observed during the 2017-2018 drilling program. In those rare cases, the specks, 1 to 2 mm across, are always confined to milky or rusty-white quartz veins as shown on Figure 7.12.



**Figure 7.12 – Speck of visible gold in a rusty-white quartz vein in HQ drill core (6.35 cm diameter) (NAM2017DD-004 at 78.80 m)**



**Figure 7.13 – Visible gold in the selvege of a milky white quartz vein in NQ (4.76-cm diameter) drill core (NAM2017DD-008 at 118.37m)**

An atypical gold intercept (Figure 7.13) was documented at depth in DDH NAM2018DD-010 to the west of the mine pit along the contact between granodiorite and a mafic dyke (“lamprophyre” according to the mine nomenclature). The gold is hosted within a small tension vein. This was the only example of gold found in this type of setting during the drilling campaign.

### 7.2.3 Alteration

The main alteration observed in the Main and East zones is the result of hydrothermal fluids that percolated through the porous coarse-grained wackes, sandstones and arenites. Alteration assemblages such as quartz-carbonate, quartz-carbonate-chlorite and pyrite-arsenopyrite were observed in association with tension quartz vein corridors and occasional hydraulic breccias. Pyrite and arsenopyrite are usually found disseminated along with carbonate and silica in alteration haloes in areas displaying structural strains. This type of alteration is usually associated with gold.

The Main and East zones have similar alteration styles in terms of hydrothermal mineral assemblages, “clouds” of disseminated sulphides, silica-carbonate enrichment, and quartz vein stockworks. Nevertheless, silicification intensity and arsenopyrite concentration is higher in the East Zone than the Main Zone. This stronger silicification rendered the protolith more resistant to weathering by meteoric water, resulting in thinner saprolitic rock compared to the profile in the mine pit.

In non-saprolitic “fresh” rock alteration typically manifests as laterally zoned envelopes characterized by “clouds” of very fine but visible disseminated sulphides associated with silica+carbonate enrichment and greater concentrations of kaolin and chlorite.

In saprolitic weathered rock, hydrothermal alteration is generally only visible as limonite-yellow, hematite/goethite-red and dark reddish-brown staining on heavily kaolinized and

argillized rock. The original proto-alteration envelopes are strongly weathered and mostly washed away. As a result, sulphides and carbonates have generally been replaced by iron oxides. This “oxide staining” along with silica flooding and quartz veining are used as identifiers for potential gold mineralization in drill core.

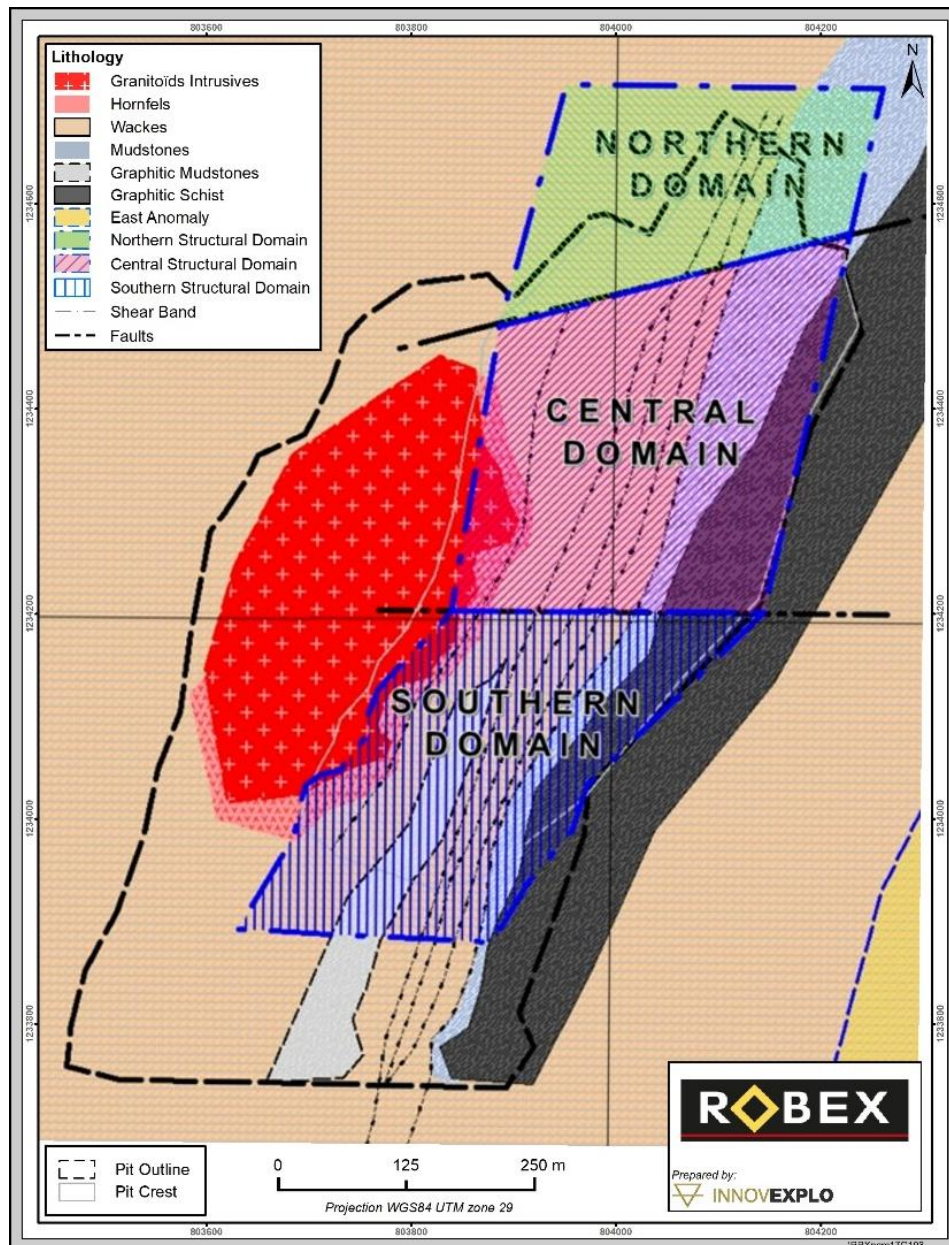
### **7.3 Structural Geology**

InnovExplo geologists conducted structural mapping in April 2017 on pit faces and some mining benches. The geologists also examined several trenches and mining benches during the 2017-2018 drilling program.

Major structures were observed in drill core, trenches, pit walls and as major lineaments interpreted from ground and airborne geophysics (MAG, gradient EM, IP-RES).

Structures and quartz vein propagation in the pit area, specifically the Main Zone, can be subdivided into three mineralized structural domains along a N-S axis separated by at least two brittle faults: 1) northern domain; 2) central domain; 3) southern domain (Figure 7.14).

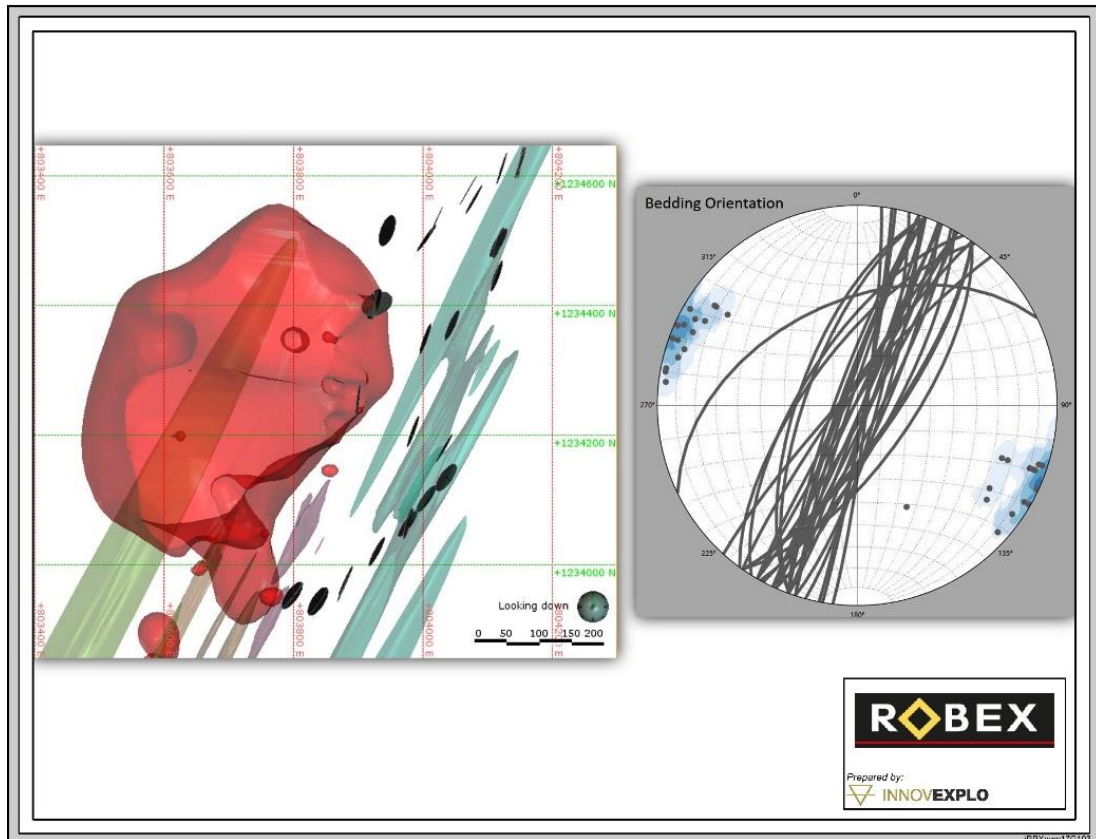




**Figure 7.14 – Structural domains map and main structures observed in the pit (Main Zone).**

### 7.3.1 Bedding

The sedimentary sequence at the mine is generally subvertical and trends NNE-SSW (Figure 7.15). Local variations in bedding are observed in the immediate vicinity of shears and faults.



**Figure 7.15 – (left) Spatial representation of bedding ( $S_0$ ) measurements; (right) Stereographic projection of  $S_0$**

### 7.3.2 Quartz vein structural domains in the Main Zone

1. The Northern Domain is characterized by NE-SW envelopes enclosing two sets of quartz veins:
  - a. moderately mineralized, subvertical, en echelon white to smokey lenticular veins trending ENE-WSW and dipping steeply to the SSE, measuring 10 to 20 m long by 10 to 20 cm thick; and
  - b. a conjugate set (stockwork) of narrower, shallow-dipping, vertically stacked white veins and veinlets trending E-W.

The stockwork in Northern Domain is generally confined to the arenitic and sandstone beds and, to a certain extent, the coarse-grained wackes. The stockworks are delineated by decametric sigmoidal (augen-shaped) envelopes.

2. The Central Domain corresponds to an envelope enclosing three sets of veins:
  - a. subvertical en echelon white veins trending ENE-WSW (Figure 7.16) and dipping steeply SSE, ranging in thickness from 10 to 60 cm;
  - b. a significant amount of undulating flat veins dipping 25-30° SSW to SSE (Figure 7.17); and
  - c. a conjugate set (stockwork) of stacked smokey and white veins striking roughly N100 and dipping 50° SSW (Figure 7.18).

The stockwork in the Central Domain is denser than in the Northern Domain. In both domains, the largest and highest-grade packets occur where stockworks overprint en echelon veins.



**Figure 7.16 – Thick subvertical ENE-WSW en echelon quartz veins in a trench in the Central Domain. The steep dip is to the SSE.**



**Figure 7.17 – Undulating flat veins dipping 25-30° SSW to SSE, Central Domain.**

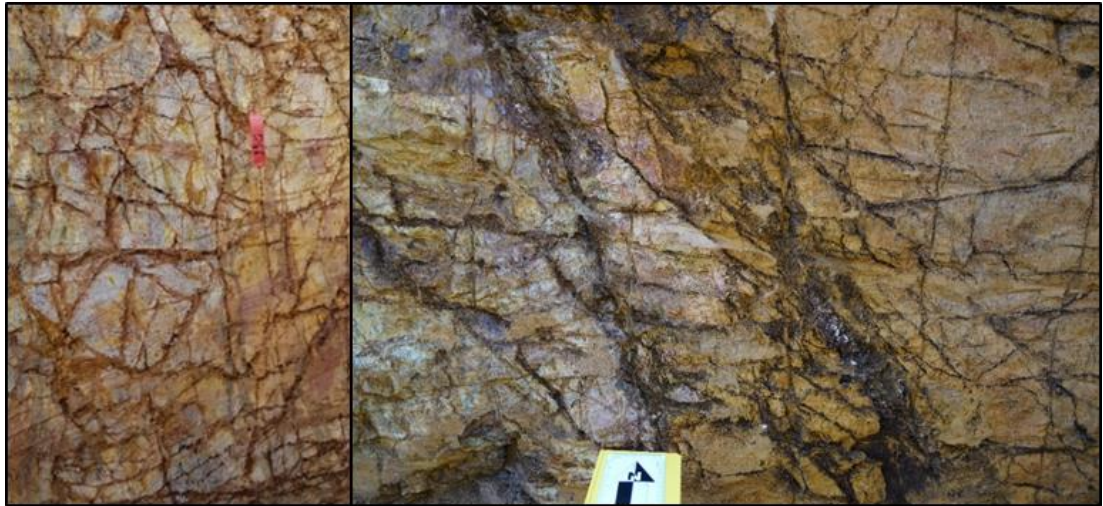


**Figure 7.18 – Dense stockwork (looking west) in the Central Domain.**

3. The Southern Domain, from north to south, is characterized, by:
  - a. An envelope of quartz veins oriented roughly 020°N. The envelope is truncated laterally by N-S structures or terminates at stratigraphic contacts. These veins propagated in coarse-grained sediments along the intrusive contact and in the hornfels (Figure 7.19). Along the intrusive contact, the stockwork (not as dense as in the Central Domain) developed as quartz-carbonate veinlets and stringers with disseminated sulphides, whereas in the

hornfels, veinlet density quickly diminishes to the east (over 15-20 m) and only the tension quartz veins remain.

- b. At least three distinct anastomosing subvertical shear corridors oriented NNE-SSW in turbidites. These corridors converge near the south wall of the mine pit. The mineralization and associated hydrothermal alteration are generally confined to more competent coarse-grained greywacke and sandstone bounded by less competent sheared mudstone and siltstone.
- c. Conjugate en echelon tension quartz veins documented in the coarse-grained sediments characterized by: (i) flat veins 2 to 3 m wide and less than 5 cm thick, dipping 25-30° S to SSE; and (ii) narrow quartz veins with a subvertical SSE dip or a steep dip (60-70°) to the W. The W-dipping veins often display sigmoidal shapes (Figure 7.20). The tension veins are confined to coarser sediments and do not propagate in shale (Figure 7.21).



**Figure 7.19 – Main Zone (left) Criss-crossing vein system in hornfels at the intrusive contact; (right) Quartz veins in the intrusive.**

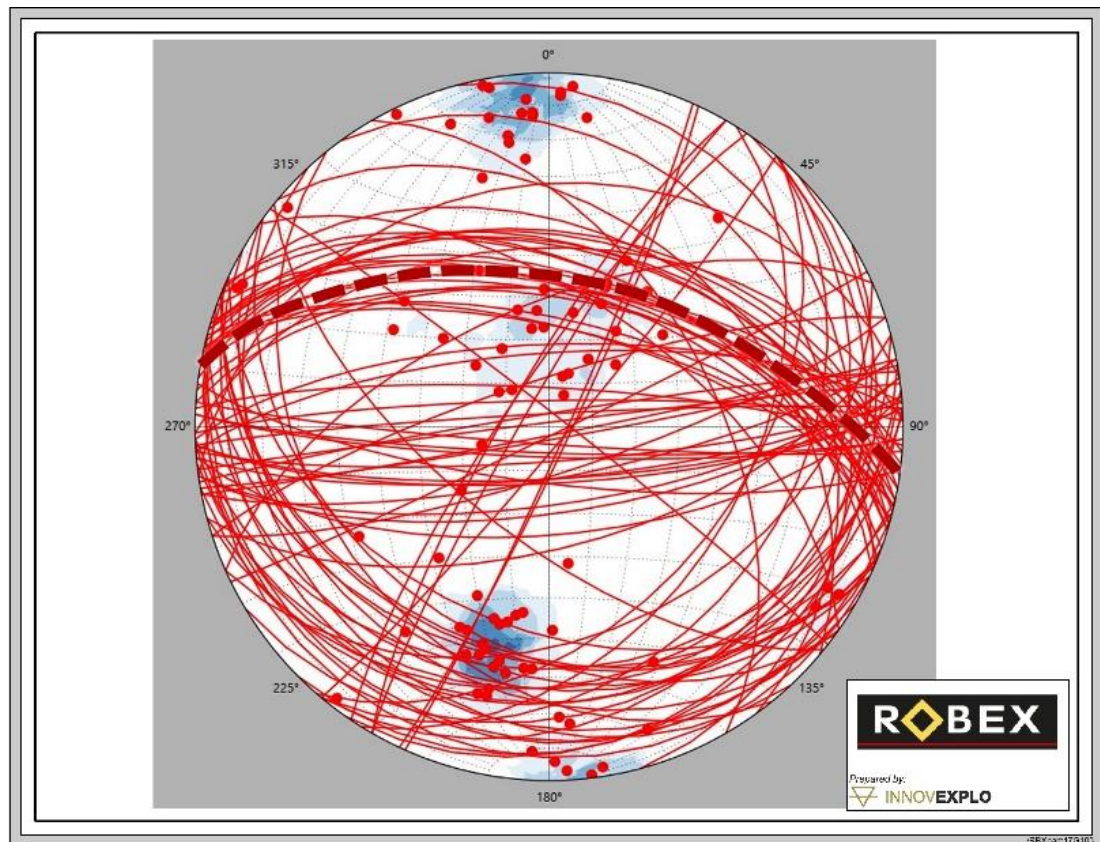


**Figure 7.20 – En echelon quartz veins in greywackes in the Southern Domain (looking south)**



**Figure 7.21 – Example of lithological control on tension veins in greywackes in the Southern Domain. The veins stop at the contact with a bed of siltstone**

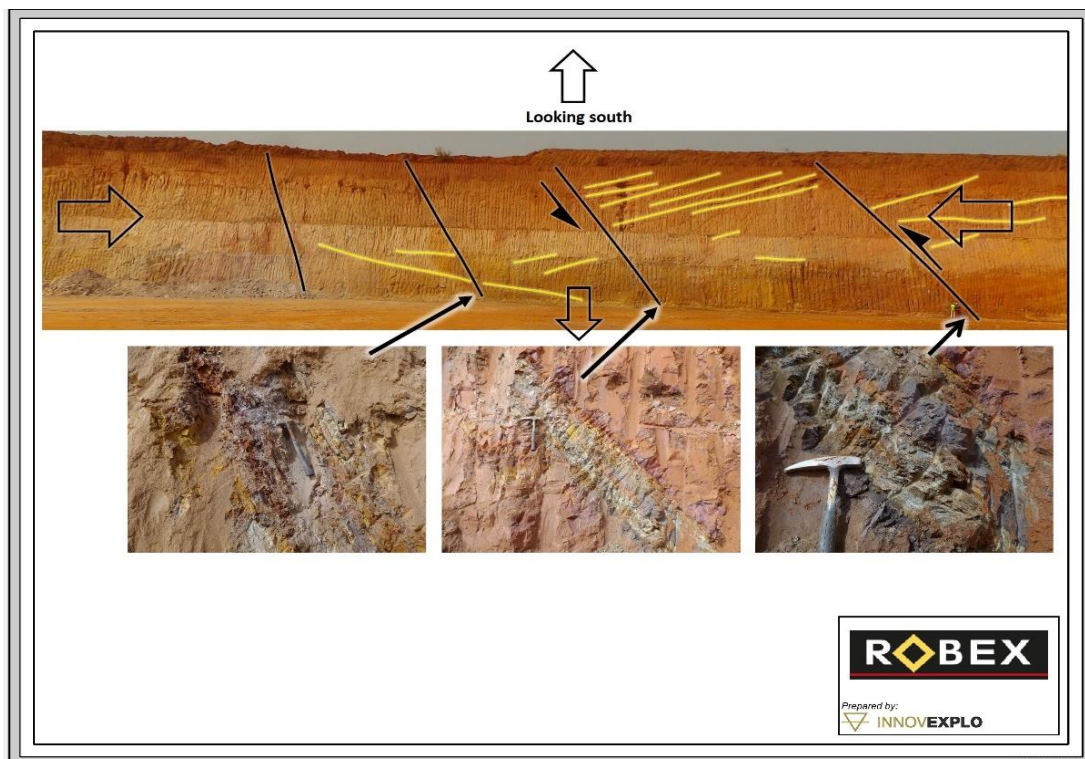
As previously described, quartz vein system in the Main Zone is structurally and lithology controlled. The individual quartz veins display numerous distinct orientations (Figure 7.22) and form stockworks hosted in brittle coarser clastic rock.



**Figure 7.22 – Stereographic projection showing the orientations of five major quartz vein families: 1) E-W trending, subvertical; 2) NNE-SSW trending, subvertical; 3) NNE-SSW trending, dipping 42° NE; 4) NE-SW trending, W-dipping; 5) SSE-NNW trending, shallow dipping**

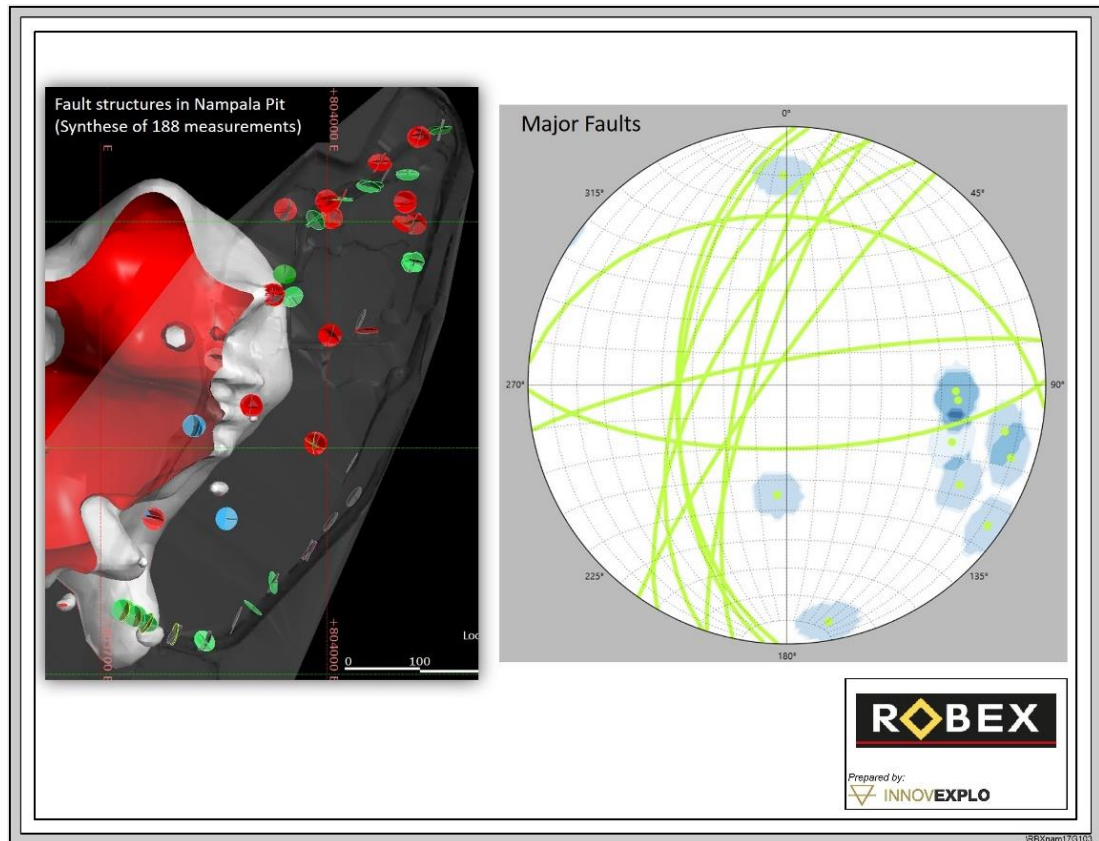
### 7.3.3 Faults and shears

Faults and shears observed in drill core confirmed surface observations, specifically that there are four types of faults in the deposit area: 1) regional graphite-rich reverse shear zones; 2) subvertical planar interbed shears oriented SSW-NNE; 3) low-angle, SE-dipping and NE-trending normal faults with little displacement; 4) “flat shears”, which are NE-SW and E-W trending faults that appear to both follow and shear the flat quartz veins dipping 25 to 30° S (Figure 7.23 and Figure 7.24).



**Figure 7.23 – Faults (black lines and arrows) and en echelon quartz veining (yellow traces) on the south wall of the pit (April 2017)**





**Figure 7.24 – (left) Spatial representation of 3D disks representing the orientations of major faults; (right) Stereographic projection of the fault measurements**

## 8. MINERAL DEPOSIT TYPES

### 8.1 Descriptive Model

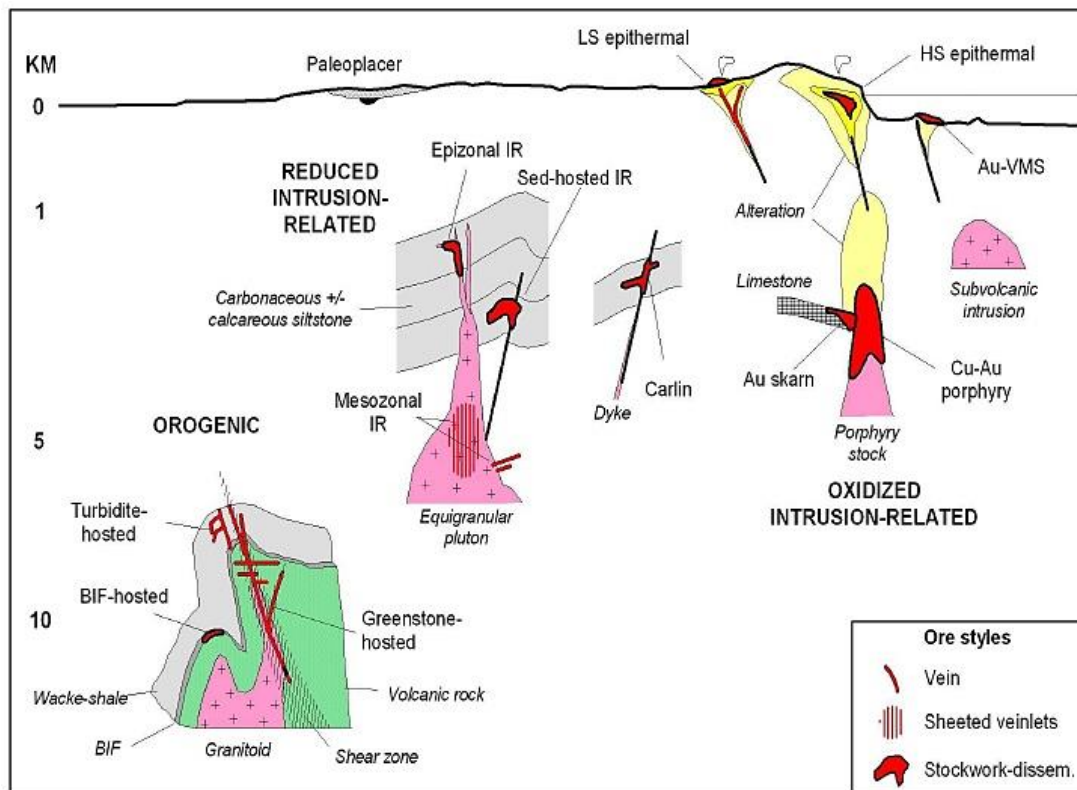
Much has been published on gold deposits in the last decade, leading to significant improvement in the understanding of some models, the definition of new types or subtypes of deposits, and the introduction of new terms (Robert et al., 2007). However, significant uncertainty remains regarding the specific distinction between some types of gold deposits. Consequently, some giant gold deposits are ascribed to different deposit types by different authors.

As represented in Figure 8.1, many significant types of gold deposits have been recognized, each with its own well-defined characteristics and environment of formation. As proposed by Robert et al. (1997) and Poulsen et al. (2000), many of these can be grouped into clans; i.e., families of deposits that either formed by related processes or are distinct products of large-scale hydrothermal systems. These clans effectively correspond to the main classes of gold models, such as the reduced or oxidized classes of the intrusion-related orogenic clan (Hagemann and Brown, 2000). Deposit types such as Carlin, gold-rich VMS and low-sulphidation are viewed by different authors as either stand-alone models or members of the broader oxidized intrusion-related clan. They are treated here as stand-alone deposit types, whereas high-sulphidation, intermediate-sulphidation and alkaline epithermal deposits are considered as part of the oxidized intrusion-related clan.

The term orogenic (as per Robert et al., 2007) was originally introduced by Groves et al. (1998) in recognition of the fact that quartz-carbonate vein deposits in greenstone and slate belts, including those in BIF, have similar characteristics and are formed by similar processes. The term has been progressively broadened to include deposits that are post-orogenic relative to processes at their crustal depth of formation. Specific deposit types in this clan include the turbidite-hosted and greenstone-hosted vein deposits, as well as the BIF-hosted veins and sulphidic replacement deposits.

Orogenic deposits of all three types share a number of additional characteristics (Robert et al., 2007). They consist of variably complex arrays of quartz-carbonate veins that display significant vertical continuity, commonly in excess of 1 km, without any significant vertical zoning unless post supergene enrichment is involved, but this will not be discussed here as those processes overprint the original state of the deposit independently of their formation processes. The dominant sulphide mineral is pyrite at greenschist grade and pyrrhotite at amphibolite grade, and Au:Ag ratios are generally >5. Arsenopyrite is the dominant sulphide in many clastic sediment-hosted ores at greenschist grade, and loellingite is also present at amphibolite grade. Orebodies are surrounded by zoned carbonate-sericite-pyrite alteration haloes that are variably developed depending on host rock composition. At the regional scale, a majority of deposits are spatially associated with regional shear zones and occur in greenschist-grade rocks, consistent with the overall brittle-ductile nature of their host structures. As an example, greenstone-hosted quartz-carbonate-vein deposits of the Birimian greenstone belts and the West African Craton are associated with large-scale carbonate alteration commonly distributed along shear zones and associated subsidiary structures (Hammond, 2011).

The quartz-carbonate veins in these deposits typically combine shear veins in moderately to steeply dipping reverse shear zones with arrays of shallow-dipping extensional veins in adjacent competent and lower strain rocks. The reverse character of the shear zone-hosted veins and the shallow dips of extensional veins attest to their formation during crustal shortening (Sibson et al., 1988; Robert and Poulsen, 2001).



**Figure 8.1 – Inferred crustal levels of gold deposition showing the different types of gold deposits and inferred deposit clans. From Dubé and Gosselin (2007), modified from Poulsen et al. (2000)**

In greenstone belts, significant vein deposits are typically distributed along specific regional compressional to transpressional structures. By virtue of their association with regional structures, these camps are also located at the boundaries between contrasted lithologic or age domains within the belts. Along these structures, the deposits commonly cluster in specific camps, localized in bends or at major splay intersections, and where deposits typically occur in associated higher-order structures (Goldfarb et al., 2005; Robert et al., 2005). The larger camps and deposits are commonly spatially associated with late conglomeratic sequences as exemplified by the Timiskaming polymictic conglomerates of the Abitibi Greenstone Belt and the Tarkwaian quartz pebble conglomerates of the Birimian Supergroup. The deposits occur in any type of supracrustal rocks within a greenstone belt and cover stratigraphic positions from lower mafic-ultramafic volcanic to upper clastic sedimentary stratigraphic levels. However, large deposits tend to occur stratigraphically near the

unconformity at the base of conglomeratic sequences, especially if developed above underlying mafic-ultramafic volcanic rocks (Robert et al., 2005).

At the local scale, favourable settings for these deposits represent a combination of structural and lithologic factors (Groves, 1993; Robert, 2004). Favourable structural settings are linked mainly to the rheologic heterogeneities in the host sequences. Shear zones and faults, universally present in these deposits, developed along lithologic contacts between units of contrasting competencies and along thin incompetent lithologies. Along these contacts and within the incompetent units, deposits will preferentially develop in bends and at structural intersections. Competent units enclosed by less competent rocks favour fracturing and veining. Common lithologic associations include Fe-rich rocks such as tholeiitic basalts, differentiated dolerite sills and BIFs, and competent porphyry stocks of intermediate to felsic composition, whether they intrude mafic-ultramafic volcanic or clastic sedimentary rocks.

At the deposit scale, the nature, distribution and intensity of the wall-rock alteration is largely controlled by the composition and competence of the host rocks and their metamorphic grade. Typically, the alteration haloes are zoned and characterized at greenschist facies by iron-carbonatization and sericitization, with sulphidation of the immediate vein selvages (mainly pyrite, less commonly arsenopyrite). (Robert et al., 1994; Robert and Poulsen, 2001)

## 8.2 Nampala Gold Deposit

Specifically, the Nampala deposit can be classified as a turbidite-hosted structurally-controlled orogenic (mesothermal) lode-gold system and share many similarities with deposits described in Item 8.1. The mineralization also shares many geological attributes with other vein-type gold (orogenic) deposits of the West African Craton and with lode gold deposits in general in terms of its host rock composition, mineralogy and hydrothermal alteration. The structural control consists of brittle structures formed during late Eburnean deformation between 2120 and 2000 Ma. (Le Mignot et al., 2017)

The Nampala gold zones and mineralization are situated in the Paleoproterozoic Birimian turbidites at the northern end of the Bagoé Formation. The mineralized zones consist of subvertical envelopes defined by an echelon tension veins and narrow vein stockworks hosted in turbidite. The mineralized zones are confined to sheared arenitic rocks and dilation jogs that propagated along an intermediary granitoid intrusive, and are injected by a mafic (gabbroic) and late felsic dyke and sill system.

The occurrence of gold in stockworks and veins in arenitic units in proximity to dioritic-gabbroic to tonalitic intrusions is a distinct feature of the deposit that can be explained by the fracturing of competent sandstone and wacke units during shearing and by the plutonic units acting as the engine that generated mineralizing fluids and/or as the driver for gold remobilization. The barren impervious graphitic schist (or mudstone) units may have played a role in trapping the hydrothermal fluids and restricting the gold-bearing veins to the more porous arenite and greywacke units.

In response to the rheological contrast between different sediment types, plastic planar shear slipping along the ductile and less permeable siltstones and mudstones caused interplanar shear bands to form, whereas the main mode of deformation in arenitic rocks was brittle fracturing, the opening of tension gaps and the formation of dilation jogs. As a result, quartz vein propagation and hydrothermal alteration is widespread in the more porous sandstone. Hydrothermal alteration and quartz vein patterns follow structural corridors, filling tension gash and dilation jogs along shear corridors in the sediments and along hornfelsed rims around intrusives.

The region is affected by a subtropical weathering that formed a lateritic cover and an underlying saprolitic oxidation profile that is typically 60 to 100 m deep. This altered the original signature of the gold mineralization, at least in the upper part of the deposit where heavy argillitic and kaolinitic alteration were instrumental in the supergene concentration of gold (remobilization). This process dissolved sulphide minerals to produce metal-charged acidic solutions which in turn dissolved other minerals such as feldspars and carbonates, in contrast to the typical alteration haloes of greenstone-hosted quartz-carbonate-vein deposits.

## 9. EXPLORATION

InnovExplo has reviewed all the data provided by Robex. Aside from drilling (Item 10), no other exploration work has been completed on the Property since the database close-out date of the last NI 43-101 technical report (Marchand, 2012).

## 10. DRILLING

This Item reports all drilling activities on the Nampala Permit since October 11, 2012.

Drilling on the Property can be divided into three programs that ran from:

1. October 11 to November 8, 2012 (“2012 Program”)
2. May 17 to May 20 (“2014 Program”)
3. October 28, 2017 to February 27, 2018 (“2017-2018 Program”)

InnovExplo obtained for 2012 and 2014 programs information from the Robex exploration team based in Bamako. InnovExplo was the acting manager for the 2017-2018 Program and obtained that information directly.

The 2012 core (“AC”) drilling program targeted the immediate southern extension area of the Nampala deposit and the potential continuation of the mineralized trend southwest of the open pit area.

The 2014 program consisted of AC condemnation drilling to define an area that would later be used for a waste rock pile.

The 2017-2018 program tested several targets by diamond drilling (“DDH”) and reverse circulation drilling (“RC”) in the vicinity of the pit, as well as extensions to the south, west and east. The focus of the program was to increase and renew resources and to investigate areas with potential based on geophysical maps and the presence of mineralized intersections in historical drill holes.

### 10.1 Overview

Since October 2012, a total of 20,881.6 m has been drilled in 205 holes. Details are summarized in Table 10.1 and shown on Figure 10.1.

**Table 10.1 – Summary of drilling from October 2012 to February 27, 2018**

Drilling Company	Year	Drilling Type	Number of Holes	Metres
Robex	2012	AC	39	3,266.0
Robex	2014	AC	9	719.0
IDC Drilling	2017-2018	RC	117	11,523.0
IDC Drilling	2017-2018	DDH	40	5,373.6
Total			205	20,881.6

### 10.2 Drilling Methods

#### 10.2.1 2012 and 2014 programs

No official written drilling procedures for the 2012 and 2014 programs were found in the information provided by the issuer. According to the Robex project geologist, field

procedures were identical to previous procedures, as described in the 2012 technical report (Marchand, 2012).

The 2012 and 2014 drilling programs consisted exclusively of AC drilling. The holes were drilled using a KLEMM Bohrtechnik rig equipped with a 3-inch triple-blade bit 90-mm steel rods and a 35 bar INGERSOLL RAND compressor. Drill cuttings were recovered using a cyclone unit for sampling. AC drilling was restricted to short holes in saprolitic material.

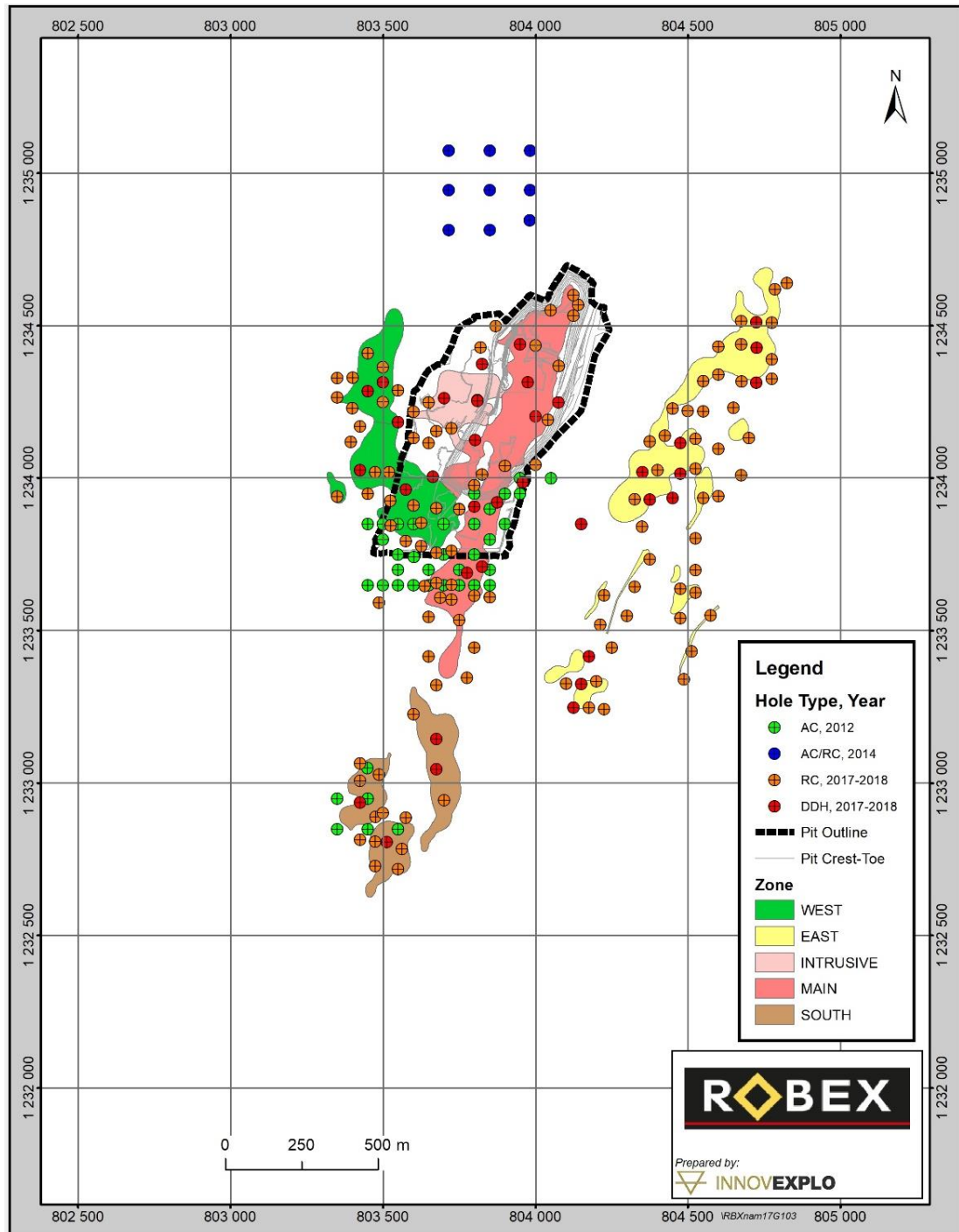
A Garmin GPSMAP76CSX instrument was used to establish the location of the drill holes. If necessary, the area was cleared and levelled with a bulldozer. A survey crew aligned the rig with front sight markers using a Brunton compass.

After completing each hole, a PVC pipe was left protruding out of the collar with a metal identification tag displaying the hole number; this made it easier to find during the final survey. The coordinates of the final collar position were then measured using the same Garmin instrument (accuracy of  $\pm 3$  m). The recorded value was transferred into the database as the official coordinates. No downhole deviation tests were performed in any of those holes.

According to the Robex geology team, the PVC pipe in the collar was often removed by artisanal miners before cementing the collar. Drill core witness samples were inadvertently discarded except for the 2011 drilling program. RC witness samples include rejects and chip-trays containing drill cuttings.

The average drill hole length for this period was 83.7 m.





**Figure 10.1 – Map showing the locations of holes drilled on the Nampala Permit from the 2012, 2014 and 2017-2018 programs, superimposed on the mineralized zones defined for the 2018 MRE**

## 10.2.2 2017-2018 program

IDC supplied two multi-purpose rigs (UDR KL900 and GAK 850) capable of rapid refitting from RC to DDH (i.e., on demand during the drilling program).

The following paragraphs describe the procedures for drill hole field implementation, surveying, material recovery and sample collection during the program.

A Garmin GPSMAP76CSX instrument was used to locate the position of the drill pad. If needed, the area was cleared of vegetation and levelled with a bulldozer. Surveyors then used a Leica GPS1200 instrument to locate the position of the planned hole. A survey crew aligned the rig with front sight markers using a Brunton compass.

After drilling, surveyors would return to resurvey the exact position of the collar. Survey data were logged and monitored daily. The coordinate system is UTM WGS84 Zone 29.

After completing each hole, a PVC pipe was left protruding out of the collar with a metal identification tag displaying the hole number. Once the cement was poured, the hole ID was inscribed into the drying cement.

Downhole surveys were performed on every hole. Downhole deviation surveys included single-shot and multi-shot pickups using the electronic downhole Reflex EZ-TRACTM instrument that simultaneously measures azimuth, inclination, total magnetic field and magnetic dip. A measurement was taken after the first 13 m to validate the azimuth and dip and then single-shot measurements were taken every 30 m during drilling. To complete the survey, multi-shot measurements were taken every 6-m while pulling the rods.

The Reflex tool was managed by IDC personnel under the supervision of Robex geologists. Once completed, the data was transferred to InnovExplo for validation.

HQ core size was used in lateritic, saprolitic and soft transition profiles, and NQ diameter in harder fresh rock profiles. Recovered core was placed in a steel box at the drill site. Each drill run in saprolite material was wrapped in a plastic bag to retain moisture and the box stapled shut. Wooden blocks were placed at the beginning and end of each drill run. Core boxes were identified, then transported to the core shack and placed on logging tables.

Diamond drill core is kept at the mine site in a core storage hangar. The metal core boxes are stored in standard core racks. Once full, the core racks are wrapped in a protective tarpaulin as the shelter does not have side walls. Each core box was identified with hole number, box number and the from-to.

RC drilling used a high-pressured 5.5-inch percussion hammer equipped with 4.5-inch steel rods powered by a Sullair Open frame 1150XHH (1150/1350 CFM – 500/350 PSI) compressor and an A.R.C. 2410 500 PSI booster. Drill cuttings are collected in a cyclone equipped with an MJ SAMCORE sampling tower consisting of two drop boxes and a double-chute automatic cone splitter. RC cuttings fall into plastic sample bags installed under both chutes of the cone splitter, creating one original sample and one

duplicate. Each pair was identified with the hole number and interval depth, and identification tags were placed in the bag with the samples. The bags were then sent to the core shack where one bag is shipped to the laboratory and the other is placed in the RC sample lay-down area. Fine and coarse fractions were taken from the sample, glued on boards in sequential order. Some of the remaining material placed in a chip tray. Chip trays are identified by hole number and depth interval, and stored in a steel container.

The collar and downhole survey data were entered into a GeoticLog drilling database.

### **10.3 Geological Logging**

#### **10.3.1 2012 and 2014 programs**

According to the Robex project geologist, logging procedures for the 2012 and 2014 programs were identical to those described in the 2012 technical report (Marchand, 2012).

InnovExplo was able to consult the original paper logging journals as well the Excel spreadsheets created from those logs. Overall, the Excel database was found to have a sufficient level of detail for RC cuttings. Geological logging was performed at the drill rig where the cuttings were sieved, washed and dried. Samples of the coarse and fine fractions of each 1-m interval were glued on a board in sequential order to provide a “stratigraphic record” of the hole. Each board was photographed and then stored in a rack. Some of the remaining material from each 1-m interval was placed in chip trays which were stored in steel containers for future reference.

#### **10.3.2 2017-2018 program**

For the most recent drilling program in 2017-2018, drill core is transported from the rig to the core shack where the boxes are laid out. Before describing the core or taking measurements, particularly in saprolite, the core is cleaned to expose textures and to prevent any bias in the density measurements.

Geotechnical logging includes the following determinations: core recovery; Rock Quality Designation (RQD); wash-outs and critical low recovery intervals (usually restricted in saprolite); intensity of degradation; drill core hardness; fracture types, amounts and core angles; and density of selected samples (selected by the logging geologist).

Then a geologist enters detailed information on lithology, structures, mineralization, alteration and veining into GeoticLog. Geological logging is mainly done by the Robex geologists under the supervision of InnovExplo’s QPs.

The geologist then marks sample intervals adds sample tags, and selects density samples for the various lithological units and weathering profiles. Photographs are taken over the entire drill hole with sample tags.

Once the samples are split (saprolite) or sawed (rock) by the core shack technicians, the boxes containing the remaining core halves are placed in racks in the core storage hangar.

The descriptions of the RC drill cuttings are generally limited to colour, fragment hardness (and weathering profile) and occurrences of quartz or other potential evidence of mineralization. The sampling intervals are systematically set every metre, and samples are collected at the cone splitter in bags placed under the cyclone concentrator. Sample tags are inserted by the geologist overseeing the RC drilling operations and sample identification numbers are written on the sample bags.

InnovExplo believes that the overall logging procedures at Nampala comply with industry best standards for logging practices. The methods preserve the integrity of raw results and meet current industry standards for data capture and management.

## **10.4 Core Recovery**

### **10.4.1 2012 and 2014 programs**

No core recovery nor RQD measurements are in the database for holes drilled in 2012 and 2014.

### **10.4.2 2017-2018 program**

Core recovery and RQD were calculated in GeoticLog for every 3-m interval in each DDH. As is usually the case in saprolitic alteration profiles, recovery tends to be higher with depth as clay content (weathering) diminishes and rock competency increases (Table 10.2).

At Nampala, other reasons may have exceptionnaly affected core recovery, especially in saprolite. One such reason is that artisanal miners (*orpailleurs*) dig tunnels in the upper portion of the saprolite. These once-empty tunnels eventually fill with uncompacted alluvial material brought in by rainwater. When the drill bit penetrates these intervals, the unconsolidated material is flushed out, leaving frequent intervals with no core recovery (“wash-outs”). Wash-outs were noted in some saprolite intervals containing brittle quartz veins.

Recovery can also be challenging in segments with brittle or pebbly quartz or in soft saprolite where the choice of drilling equipment and procedures can lead to potential core recovery issues.

RQD values depend on a multitude of factors including the intensity of structural deformation, degree of metamorphism, intensity and type of weathering and alteration, rock type, size and frequency of veining systems, and quality of the drilling operations.

Structural features could have locally contributed to weak to average RQD measurements in long intervals as drilling was performed at a low angle to these features. In addition, the mineralized vein system can locally manifest as a very dense stockwork of millimetric to centimetric veinlets producing planes of weakness that often

break when submitted to the stress of drilling. It can be difficult to determine if fracturing in the core was induced by drilling or if it represents the in-situ reality. RQD values are presented in Table 10.2 for each core length ranges.

In contrast to the DDH method, RQD cannot be evaluated during RC drilling, although material recovery can be assessed. However, measuring the recovery of RC cuttings is more demanding than calculating RQD as it requires comparing recovered material versus theoretical weight instead of direct measurements of core length (volume).

**Table 10.2 – DDH core recovery and RQD per depth along the hole**

Core Length (m)	RQD (%)	Recovery (%)
0 to 10	38	69
10 to 30	47	75
30 to 50	50	81
50 to 75	47	86
75 to 100	57	89
100 +	64	93

To calculate RC recovery ratios, all material is recovered, weighed and then compared to a theoretical weight based on hole diameter, length and density. The theoretical weight is difficult to determine as it varies significantly depending on lithology, which must be evaluated using drill cuttings, and on alteration strength, which is particularly strong but gradually decreases downhole in the saprolite. Furthermore, as drill cuttings are unconsolidated and have a small particle size, there are many factors that can contribute to material loss and therefore affect the end results (underground fissures or openings, groundwater pockets, loss on the outside of the drill rods, loss on the splitting device used for sampling, etc.). Nevertheless, it is still the best way to evaluate whether drilling was performed adequately, and it generally provides a good estimate of RC recovery.

Since taking such measurements require extra personnel to avoid delaying the drilling operations, only a few measurements were taken at various depths and locations around the Nampala deposit. The measurements showed that recovery increased at depth with recovery often ranging around 65% in the first 12 m, gradually increasing to as much as 86% at depths of up to 40 m. Average recovery was calculated to be 74%, which is acceptable. Local occurrences of recoveries of 35% or less were encountered in areas with excessive groundwater.

## **10.5 2018-2019 New drilling program**

A new drilling program begun in September 2018 on Nampala gold mineralized zones (Main, Intrusive, West, East and South) with the main objectives of potentially upgrading Inferred resources into Indicated and adding new Inferred resources to the Project (refer to Robex Press Release of September 24, 2018). The new program plans an effort of approximately 20,000 m of drilling. Validated results were not available at the time of this report.

## 11. SAMPLE PREPARATION, ANALYSES AND SECURITY

The following paragraphs describe the issuer's sample preparation, analysis and security procedures for the 2012, 2014, and 2017-2018 drilling programs. The information from the 2012 and 2014 programs was provided by the issuer, whereas the information from the 2017-2018 program was obtained onsite by InnovExplo geologists who were responsible for managing the drilling campaign, integrating the analytical results into the database, and supervising the quality control and quality assurance ("QA/QC") program and results.

### 11.1 Sampling Method and Approach

To reduce variability and build confidence in the strength of the analytical database, it is important to establish sample collection, preparation, assay and testwork protocols appropriate for the mineralization type combined with a suitable QA/QC program.

#### 11.1.1 Core handling, sampling and security

No core drilling was conducted during the 2012 and 2014 programs.

The following description applies only to the 2017-2018 program, which was under the direct supervision of InnovExplo geologists.

At the core shack, Robex employees open the boxes, inspect the plastic film (if present) to prevent loss, and place the boxes on the logging tables. The depths written on the wooden blocks are verified, the core length measured, and the boxes labelled accordingly. To determine RQD, geologists or geological technicians record any natural breakage under 10 cm in GeoticLog. Core recovery is also recorded in GeoticLog.

A geologist supervises the geological description (logging), which is done in GeoticLog. Core intervals slated for sampling are marked and two sample tags are placed at the beginning of the interval (typically 1-m average, but ranges from a min. of 0.3 m to a max. of 1.5 m, respecting the lithological, alterations and/or mineralization contacts). QA/QC tags (blanks, standards or duplicates) are inserted in the sampling sequence, one of each type for every 18 samples to form batches of 21. The core samples are then sawed in half, one half representing the sample for the laboratory and the other half kept in the core box for future reference (witness sample). The same side of each sawed core interval is selected for shipment to prevent sampling bias. Each sample was placed in an identified plastic bag with a matching sample tag and then sealed with a zip tie. The second tag is left in the core box at the end of its sample interval. QA/QC samples are inserted by the core shack supervisor. Under the supervision of the project geologist, sample bags (usually 8 to 10 at a time) are placed in rice sacks and sealed with zip ties. The sample numbers and sequential bag numbers are written on each rice sack and this information is recorded on a form.

Once logged, labelled and sampled, the core boxes are taken to the outdoor core storage area and the exact location recorded in an Excel spreadsheet for future reference.

Robex employees deliver the rice sacks to the SGS Minerals Services ("SGS") facility in Bamako along with a sample submittal form providing contact and project

information, date, sample type and quantities, requested preparation and analytical methods, etc. A copy of the form is also sent by email to the laboratory and a copy saved in the archives.

Upon receipt, assay results are checked for inconsistencies and QA/QC compliance before being compiled in the GeoticLog database.

### 11.1.2 RC drilling, sampling and security

For the 2012 and 2014 programs, Robex personnel confirmed that the procedures for those programs were similar to those detailed in the previous technical report (Marchand, 2012). The logging and sampling tasks were carried out by Robex geologists under the supervision of Jacques Marchand (P.Eng.).

The list below describes the procedures for the 2012 and 2014 programs, as outlined in Marchand (2012):

- A sample consisting of two splits is taken every metre from the cyclone and placed into jute bags labelled with the drill hole and interval, then the cyclone is cleaned. The second bag (the witness sample) is kept for future reference.
- The technician transports the samples to the processing facility.
- Wet samples are dried on a plastic tarp.
- Each sample is quartered to obtain a 2 kg sample (a duplicate sample may be taken as well), put into a plastic bag labelled with the analysis number, along with a numbered analysis tag, and stored. The sample information is entered in the analysis file.
- A cutting (a small quantity of washed material used to obtain a geological description) is taken from the unused portion. The rest of the unused portion is stored in the sample bag.
- The elutriator is cleaned.
- The cutting is placed on a table (a checkerboard pattern representing the 1-m interval), and geological observations are made and entered in the geological description file. Once all samples from a hole have been laid out and catalogued, a photograph is taken of the table and the cuttings are stored in a box labelled with the hole number.
- Samples are grouped into batches of 20 (17 regular samples plus 3 QA/QC samples). The QA/QC samples comprise one high-grade standard, one low-grade standard, and one blank or duplicate. A shipment slip is created for each shipment.
- Samples are transported by truck to the laboratory by a Robex employee or picked up by laboratory staff. Unused portions are stored in specially outfitted areas near the camp.
- The cuttings are stored in containers near the camp.
- The logs are reproduced daily in a spreadsheet-type digital file specially formatted for this type of work. The data from these files is then copied for updating the geologists' individual field databases and, once the analysis results have been verified, added to the project database.

- All work is the direct responsibility of the field geologist and is supervised by the project manager.

The 2017-2018 RC drilling program was supervised by InnovExplo geologists. The main purpose of the program was to provide exploration and “infill” drilling to test mineralized zone continuity between “exploration” diamond drill holes. As the purpose was to test continuity, geological logging was not considered as important as for diamond drilling, resulting in variations in the sampling procedures as described below.

Each RC sample collected in 2017-2018 represents 1 m of drilling and consists of pulverized material with a particle size rarely exceeding 2 mm. Pressurized air is used to push the pulverized material to the surface through the steel rods and into a cyclone that delivers the drill cuttings to an automatic cone splitter equipped with two chutes to facilitate the collection of a field duplicate. For each metre drilled, a numbered plastic sample bag is placed directly under the tray of each chute to recover the sample and a witness (or duplicate) sample.

At the drill site, the geologist logs the sample’s description (colour, quartz content, mineralization, alteration, weathering profile etc.). The bag is then sealed with a zip tie and placed on the ground in sequential order. The geologist is also responsible for inserting the QA/QC samples into the sequence at the drill site.

At the end of every working shift, the sample bags are transported by truck to the core shack and prepped for shipping to the SGS laboratory in Bamako. The shipping and handling procedures are the same as those used for diamond drilling campaigns (see section 11.1.1).

## 11.2 Laboratory Accreditation and Certification

The International Organization for Standardization (“ISO”) and the International Electrotechnical Commission (“IEC”) form the specialized system for worldwide standardization. ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories sets out the criteria for laboratories wishing to demonstrate that they are technically competent, operating an effective quality system, and able to generate technically valid calibration and test results.

Since 2012 Program, Robex has used two independent commercial laboratories to analyze their samples. The SGS Mali laboratory in Bamako has ISO/IEC 17025:2005 accreditation through the SCC. The ALS Minerals (“ALS”) laboratory in Bamako has no accreditation, but since the methods used at their facility are the same as ALS’ accredited laboratories, the results were treated as valid. In addition, ALS operations are controlled by the regional hub laboratory in Johannesburg, South Africa (Ousmane Couliaby, Eng., pers. comm.). Table 11.1 describes the number of samples assayed by each laboratory.



**Table 11.1 – Number and percentage of samples assayed by each laboratory during the 2012, 2014 and 2017-2018 programs**

Laboratory	Drilling program	Number of assays	Percentage (%)	Accreditation and certification
ALS Minerals	2012 and 2014	13,373	41.5	None
SGS	2017-2018	18,787	58.5	ISO/IEC 17025
TOTAL		32,160		

### 11.3 Laboratory Preparation and Assays

#### 11.3.1 ALS – 2012 and 2014 programs

- Samples are sorted, bar-coded and logged into the ALS program, then dried and weighed;
- Samples are crushed (CRU-31) to a fineness of 70% passing 10 mesh (2 mm) and split using a riffle splitter (SPL-21);
- A 250 g split of the crushed material is further comminuted to a pulp (PUL-31) by pulverizing to 85% passing 75 µm (200 mesh);
- The pulp sample is analyzed by Fire Assay (“FA”) with an Atomic Absorption Spectrometry (“AAS”) finish (Au-AA26).

#### 11.3.2 SGS – 2017-2018 program

##### RC drilling preparation (PRP87)

- Samples are sorted, bar-coded and logged in the laboratory program, then dried and weighed;
- Samples are crushed to a fineness of 75% passing below 2 mm and split;
- The sample is pulverized to a fineness of 85% passing 75 µm (200 mesh).

##### Diamond drilling preparation (PRP85)

- Samples are sorted, bar-coded and logged into the laboratory program, then dried and weighed;
- Samples are crushed to a fineness of 75% passing below 2mm and split;
- A 1,000 g split is pulverized to a fineness of 85% passing 75 µm (200 mesh).

##### Assaying (RC and diamond drilling)

- Samples were analyzed by FA with AAS finish (FAA505);
- For samples grading over 10.0 g/t Au, pulps (50 g) are re-assayed by FA with a gravimetric finish (FAG505).

## 11.4 Density Measurements

InnovExplo conduct systematic density measurements during the 2017-2018 program to re-assess the bulk density parameters for all lithologies and weathering profiles. A total of 1,483 density measurements were taken on core samples (including 252 measurements inside the Nampala pit limits).

Bulk density was determined using standard water immersion methods on core samples. The following equipment was used (Figure 11.1): a precision scale (Mettler Toledo), metal supports, a half-cylinder core holder, a water container, a level, and clear plastic wrap.

The instructions followed standard steps: dry the core sample, install and level the apparatus, fill with water and note temperature, clean the core of any external agents, wrap the core (plastic wrap to prevent it filling with water), tare the scale, fix the core sample (in the core holder), note the sample's dry weight, remove the sample and tare the scale, put the core back and submerge it, and note the sample weight in the water (corresponding to the weight of the water volume displaced by the sample).

Density is calculate using the following formula:

$$\text{Density} = \frac{\text{Weight of sample}}{\text{Weight of sample} - \text{Weight of sample submerged}}$$



**Figure 11.1 – Apparatus used to measure drill core density**

## 11.5 Quality Assurance and Quality Control (QA/QC)

For the 2012, 2014 and 2017-2018 programs, a total of 32,160 samples were submitted to the laboratories, including 4,250 QA/QC samples.

No documentation was available for the 2012 or 2014 QA/QC assays. According to Robex geologists, the QA/QC program for these programs consisted of the systematic insertion of one standard (certified reference materials or “CRM”), one blank and one field duplicate into every batch of samples, for a total of 21 RC samples per batch. No batches were re-assayed due to QA/QC issues. The 2012 and 2014 results were taken from internal activity reports prepared by the issuer’s exploration team.

The 2017-2018 QA/QC program, supervised by InnovExplo, includes the insertion of standards, blanks and field duplicates, as well as pulp checks. Certified reference materials (“CRMs”) were used as standards. One standard, one blank and one field duplicate were inserted into every batch of samples, for a total of 21 RC samples or 20 DDH samples per batch. In a batch, the insertion of the blank is usually placed (by the geologist) after any interval with potentially significant gold concentration. A check was also performed on a selection of approximately 10% of rejects and pulps grading over 0.1 g/t Au. Those rejects and pulps were re-tagged and re-assayed and handled as duplicates. During the program, actions were taken for solving QA/QC issues which included re-analyzing sample batches when required.

Both laboratories have their own internal QA/QC program. Each routinely used blanks and standards as well as pulp and reject duplicates to test their procedures quality and consistency. In the event of non-compliance to internal quality standards, the laboratory automatically re-analyzed and reprocessed the batches containing the failed QA/QC samples using the laboratory’s internal procedures.

The discussion below details the results of the issuer’s QA/QC program. It does not present the results of the internal QA/QC program of the laboratories.

### 11.5.1 Blanks

Blanks for the 2012 and 2014 drilling programs were samples of barren rock. Blanks for the 2017-2018 program were supplied by Rocklabs as 50-g individual bags with a certified gold concentration below 0.004 g/t Au.

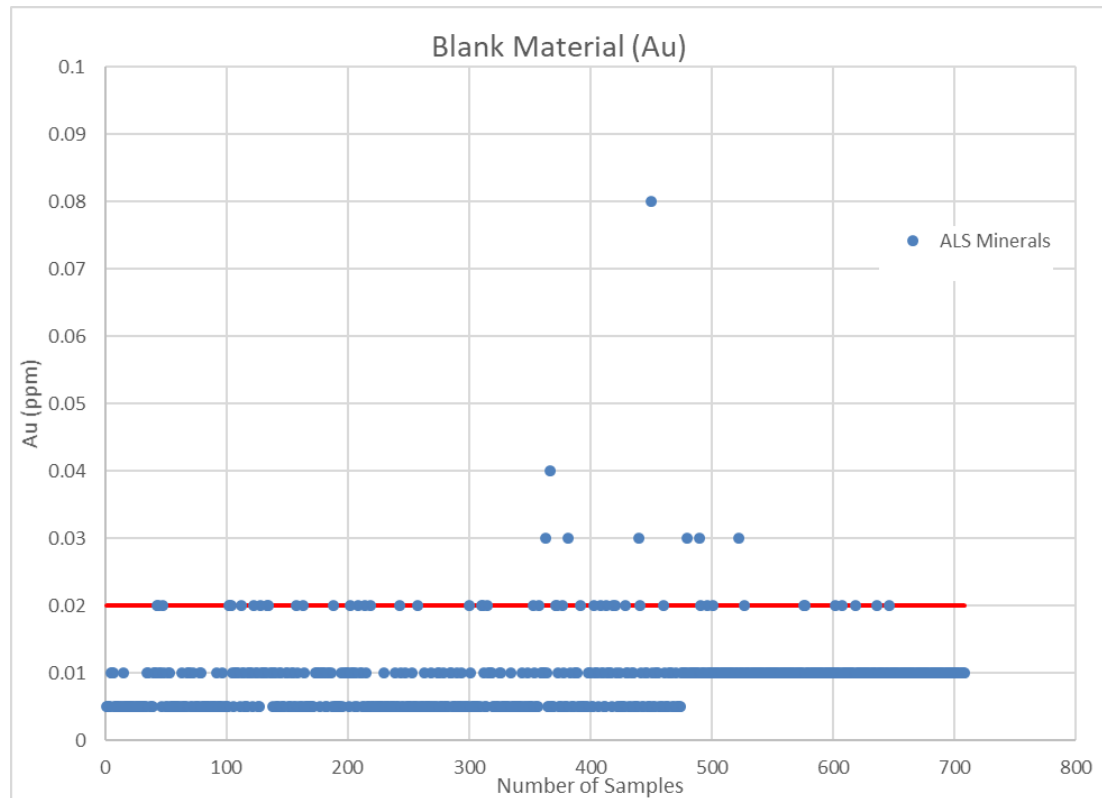
Blanks are used to determine if contamination occurs during the preparation and/or analytical process. If a failed blank is observed (i.e., a value above the designated level of acceptance), further action must be taken to determine whether the batch results are accepted or rejected.

#### 11.5.1.1 2012 and 2014 programs

Contamination was monitored for the 2012 and 2014 programs by routinely inserting one blank after every 20 samples. The blanks were derived from crushed barren silica sandstone located 50 km east of the Nampala Mine. InnovExplo was not provided with laboratory certificates regarding the origin or metal content of the blank material.

According to the issuer’s geologists, if any blank yielded a gold value above 0.1 g/t Au, the project geologist decided whether the batch should be re-analyzed.

Only 8 of the 708 blanks in the 2012 and 2014 programs exceeded the acceptance limit of 0.1 g/t Au, for a success rate of 98.9%. Because the failed blanks did not exceed 0.08 g/t Au and their respective batches did not yield significant results, no further actions were taken. Figure 11.2 shows the results of the blanks for the 2012 and 2014 programs.



**Figure 11.2 – Results for blanks from the 2012 and 2014 programs (ALS)**

### 11.5.1.2 2017-2018 program

Potential contamination was monitored by the insertion of at least one blank per batch that was selectively placed after an interval with potentially significant gold values or after interesting geological features (alteration, deformation, etc.).

The failure threshold for blanks is 0.02 g/t Au. In the event of a blank assaying above this threshold, the project geologist must decide the course of action based on the following protocol:

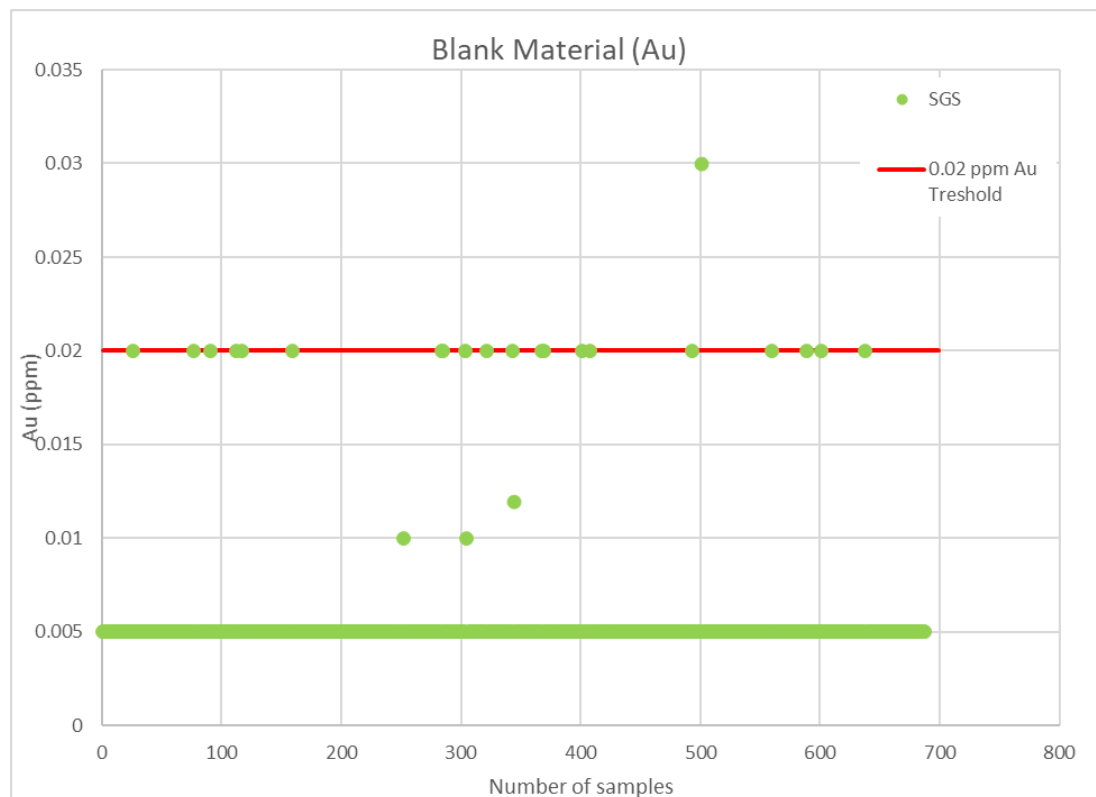
1. If a significant gold value is observed between the failed blank and the previous successful blank, the failed blank is rejected and the entire batch re-assayed;
2. If there is no significant gold value in the batch or if the failed blank is beyond an interpreted mineralized zone, the failed blank is accepted.

A total of 695 blanks were inserted during the 2017-2018 program. Eight (8) were tagged as Listed Not Received (“LNR”) by SGS. The batches containing the LNR

blanks were accepted. Only one blank returned a result over the failure threshold (at 0.03 g/t Au), for a success rate of more than 99.9%.

Figure 11.3 shows the results of the blanks for the 2017-2018 program.

InnovExplo is of the opinion that the results are satisfactory and adequate, and no material issues were noted.



**Figure 11.3 – Results for blanks from the 2017-2018 program (SGS)**

### 11.5.2 Certified reference materials (standards)

Accuracy is monitored by inserting standards. Standards are used to detect assay problems within specific sample batches and long-term biases in the overall dataset. The definition of a failure is when assays for a standard fall outside three standard deviations (3SD). Outliers are excluded from the calculation of the standard deviation.

A total of 1,439 standard samples were sent to ALS and SGS (ALS in 2012 and 2014; SGS in 2017-2018). The overall success rate was 97.4%, with 1,401 samples passing the  $\pm 3SD$  criterion. For the 2.6% standards that failed, 0.4% represent 7 standards that were tagged as Non-Sufficient Sample (“NSS”) or Insufficient Sample (“IS”) by the laboratory or that had no assay value. InnovExplo attributed the missing assay values to human error. Because the failure rate is insignificant, the potential impact on resources is considered negligible.

The  $\pm 3SD$  criterion was defined as follows for each standard:

- If less than 25 results of the standard are available, 3SD is identical to the value mentioned on the certificate of authentication;
- If more than 25 results of the standard are available, 3SD is re-calculated using the analytical results obtained from the laboratory.

Table 11.2 shows the number of samples of each standard and the quality control results.

#### 11.5.2.1 Fall 2012 program and 2014 program

Two different CRMs (OXA89 and OXJ80) from Rocklabs were used for the 2012 and 2014 programs. Standards were inserted at the rate of one per sample batch.

In the case of a failed CRM sample, the project geologist determined whether the batch should be re-analyzed. No requests for re-analysis were made during the 2012 and 2014 programs.

#### 11.5.2.2 2017-2018 program

Twelve (12) different CRMs were used during the 2017-2018 program representing a range of grades and matrix types (oxide, sulphide or silica-rich). Standards were inserted at the rate of one every 20 DDH samples or one every 21 RC samples.

In the case of a failed CRM sample, the project geologist decides whether the batch should be re-analyzed. The failed standards during the 2017-2018 program occurred in batches with no significant mineralization, therefore no request for re-analysis were made.

**Table 11.2 – CRM results during the 2012, 2014 and 2017-2018 programs**

Standard (CRM)	Supplier	Laboratory	Number of samples inserted	Number of failures (outliers)	Number of NSS or empty values	Perecent passing quality control
HiSilK4	Rocklabs	SGS	62	1	0	98.4
OxD107	Rocklabs	SGS	146	0	0	100.0
OxD144	Rocklabs	SGS	11	2	0	81.8
OxE126	Rocklabs	SGS	16	1	0	93.8
OxF125	Rocklabs	SGS	84	2	0	97.6
Oxi121	Rocklabs	SGS	121	1	0	99.2
OxK119	Rocklabs	SGS	21	1	0	95.2

Standard (CRM)	Supplier	Laboratory	Number of samples inserted	Number of failures (outliers)	Number of NSS or empty values	Percent passing quality control
OxL118	Rocklabs	SGS	90	1	0	98.9
SE58	Rocklabs	SGS	36	1	0	97.2
SF85	Rocklabs	SGS	66	2	0	97.0
SH82	Rocklabs	SGS	58	1	0	98.3
Si81	Rocklabs	SGS	19	0	0	100.0
OXJ80	Rocklabs	ALS	356	8	4	96.6
OXA89	Rocklabs	ALS	353	10	3	96.3
<b>Total</b>			<b>1,439</b>	<b>31</b>	<b>7</b>	<b>97.4</b>

InnovExplo is of the opinion that the used of CRMs during the 2012, 2014 and 2017-2018 programs were following best practices and that their results supports that the data is valid and reliable.

### 11.5.3 Duplicates

A component of the QA/QC program included the determination of the analytical precision (repeatability) of the original gold assay data from the laboratory. The 2012 and 2014 programs used field duplicates whereas the 2017-2018 program used three types of duplicates: field, reject (coarse) and pulp. Duplicate assays provide an estimate of the reproducibility and is related to sample type and size, sample preparation (homogenization, crushing, pulverization, sub-sample weight), analytical method, and the homogeneity of the mineralization itself (e.g. nugget effect).

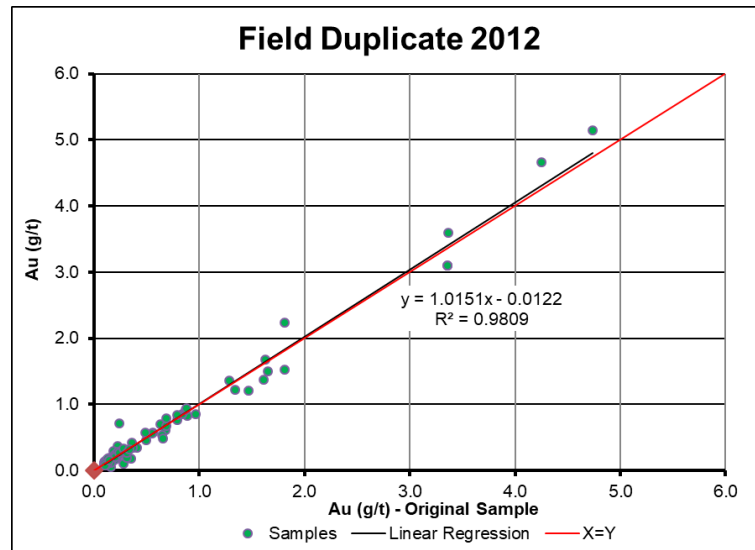
Outliers were removed from the dataset before conducting a statistical analysis or plotting the duplicates. All samples with assays more than 3 times the value of the original sample were removed.

#### 11.5.3.1 Field duplicates

Field duplicates consist of half-core samples for diamond drilling or a full second sample bag for the RC cuttings. One field duplicate was added to every batch. For the 2017-2018 program, at the rate of one every 20 DDH samples or one every 21 RC samples.

The 2012 and 2014 programs consisted of RC drilling only. Field duplicates consisted of a second sample taken from the drill cuttings that match the original sample. The split was performed with a riffle splitter.

Eighty-one (81) field duplicates were assayed over that period of drilling. The correlation and linear regression indicate very good reproducibility: a grade variation of +1.01% and a correlation factor of 98.1% (excluding two outliers) (Figure 11.4).

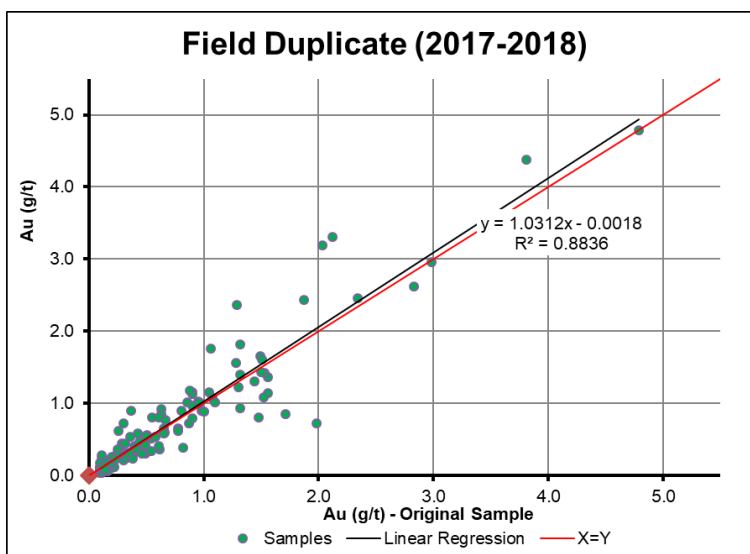


**Figure 11.4 – Linear graph of results for field duplicates (n= 81) from the 2012 and 2014 RC drilling programs**

Two types of field duplicates were generated during the 2017-2018 program: half-core samples for DDH drilling and a half-split of the cuttings for RC drilling. RC duplicates were collected at the drill site by the operators at the rig (i.e., the second bag of cuttings (witness sample) collected under the automatic cone). The DDH duplicates comprised sawed half-core samples (i.e., the witness sample). Duplicates were tagged with unique sample identification numbers within the sequence and their nature was unknown to the laboratory.

A total of 149 field duplicate assays showed a linear regression slope of 1.03 and a correlation factor of 88.36% (excluding two outliers). The results indicate good reproducibility of the gold values (+8%) (Figure 11.5).





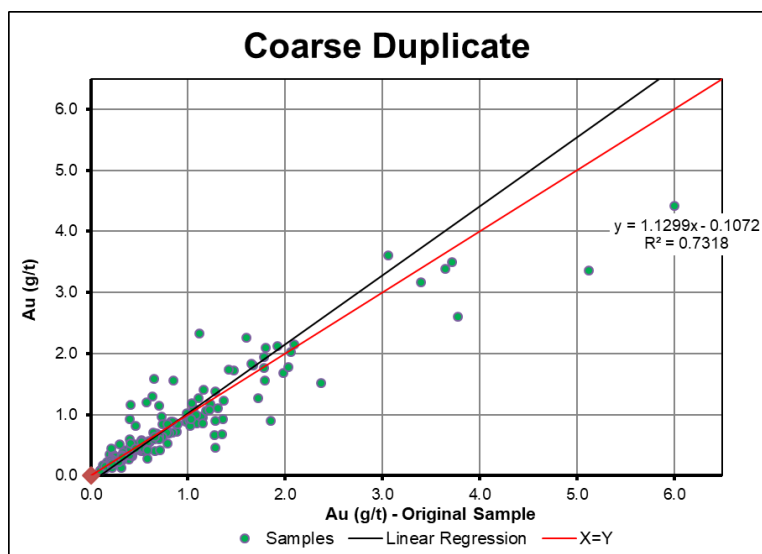
**Figure 11.5 – Linear graph comparing gold assays of original samples to field duplicates (n= 149) from the 2017-2018 drilling program**

### 11.5.3.2 Reject (coarse) duplicates

Reject (or coarse) duplicates are duplicates of the original sample taken immediately after the first crushing and splitting step. They are used to monitor the quality of the sample preparation and/or heterogeneity (e.g. nugget effect) at that step. The precision of coarse duplicates indicates whether two subsamples taken after the primary crushing stage are representative and reproducible subsplit for that crushed particle size.

Five percent (5%) of rejects (coarse crush samples) grading over 0.1 g/t Au were selected randomly from the database to generate duplicates. After recovering the rejects from the laboratory, Robex personnel prepared the duplicates by re-bagging and re-tagging the splits with new sample numbers, and sent them back for assaying.

The 5% represents 345 coarse duplicates. As of the date of this report, 162 results have been received and are shown on Figure 11.6. Figure 11.6 is a plot of the 131 coarse duplicates showing a linear regression slope of 1.13 and a correlation coefficient of 73.1% (excluding outliers). The results indicate good reproducibility of gold values.



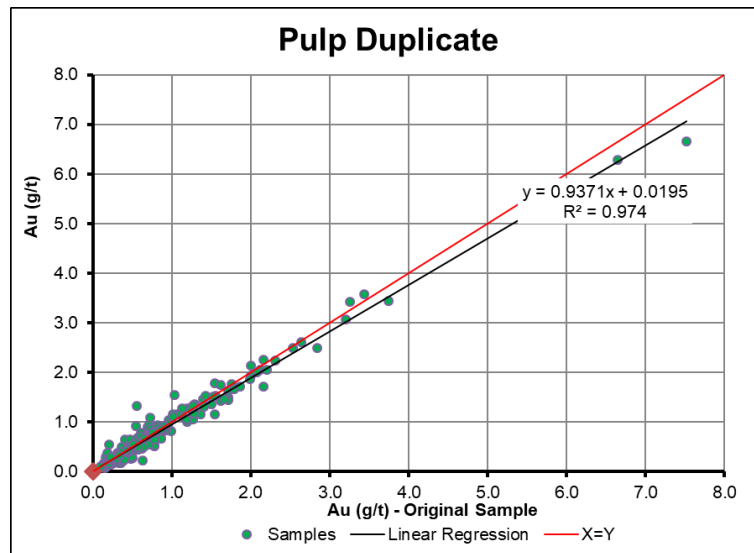
**Figure 11.6 – Linear graph comparing reject (coarse) duplicates to original samples (n = 162), 2017-2018 program**

### 11.5.3.3 Pulp duplicates

Pulps are subsamples that have been pulverized to a finer particle size for assaying. Pulp duplicates are necessary to ensure proper sample preparation and homogenization during the pulverization stage. The precision of pulp duplicates indicates whether the two subsamples taken after pulverization are representative and reproducible.

Five percent (5%) of pulps grading over 0.1 g/t Au were selected randomly from the database to generate duplicates. After recovering the pulps from the laboratory, Robex personnel prepared the duplicates by re-bagging and re-tagging the splits with new sample numbers, and sent them back for assaying.

The 5% represents 342 pulp duplicates. As of the date of this report, 208 assay results have been received and are shown on Figure 11.7. The graph shows a linear regression slope of 0.94 and a correlation factor of 97.4% (excluding 2 outliers). The results indicate excellent reproducibility of gold values.



**Figure 11.7 – Linear graph comparing original samples to pulp duplicates grading  $\geq 0.1$  g/t Au (n = 208), 2017-2018 drilling program**

#### 11.5.3.4 Precision of duplicates

To determine reproducibility, precision is calculated by the following formula:

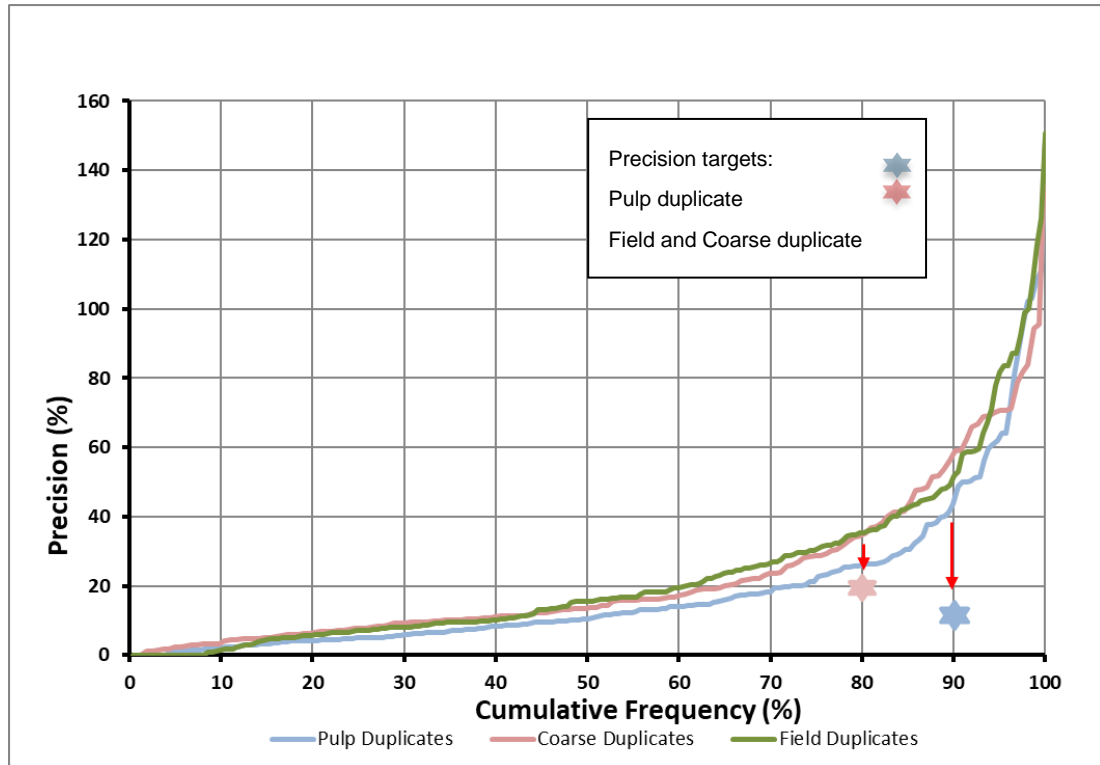
$$\text{Precision (\%)} = \frac{(\text{Duplicate Grade} - \text{Original Grade})}{\text{Average Between Duplicate Grade and Original Grade}} \times 100$$

Precision ranges from 0 to 200% with the best being 0% (no difference).

Figure 11.8 showing precision versus cumulative frequency illustrates the following aspects:

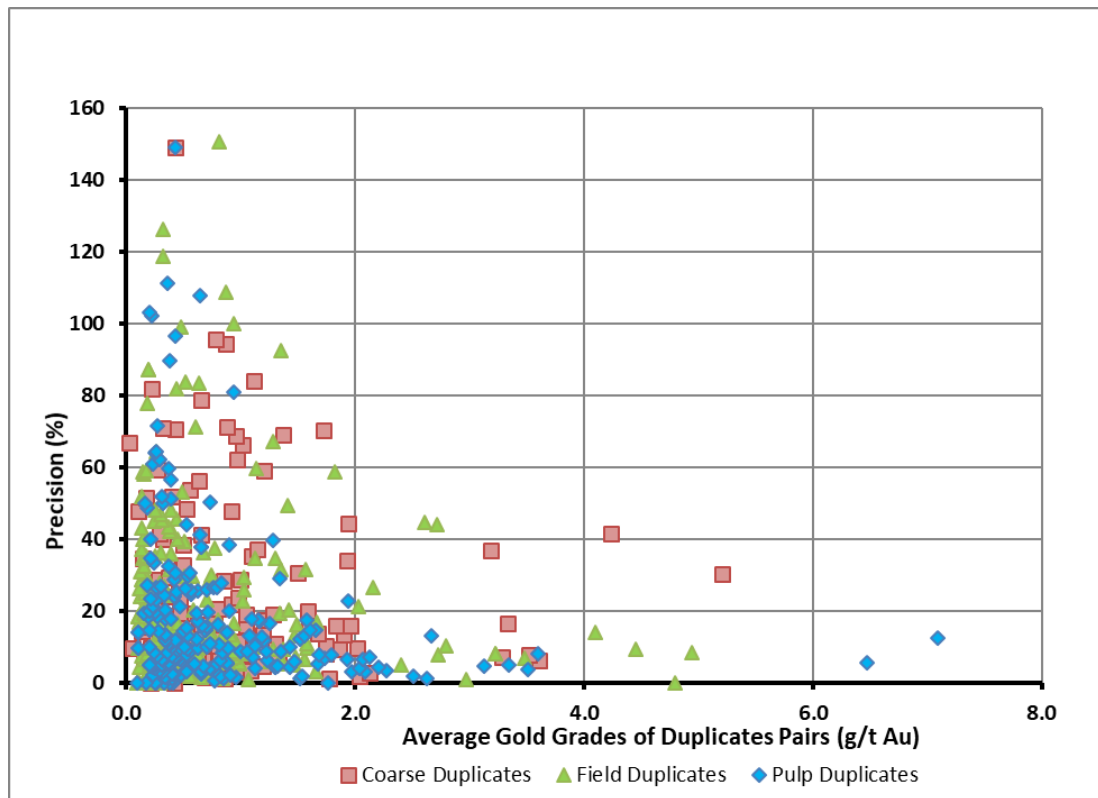
- Approximately 75% of field and coarse duplicates have a precision better than 30%;
- Approximately 85% of pulp duplicates have a precision better than 30%.

According to the graph, the precision of the pulp duplicates is better than the precision of the field and coarse duplicates, which is generally expected. In gold deposit, reproducibility at different scale (original sample versus field, coarse and pulp duplicates) also reflects the natural heterogeneity of the mineralization (e.g. nugget effect).



**Figure 11.8 – Precision versus cumulative frequency of duplicates: pulp (blue), coarse (red) and field (green). Theoretical precision targets are shown as coloured stars.**

Figure 11.9 shows that samples with higher grades tend to have greater precision than samples containing less than 1.0 g/t Au. The lower precision is generally due to the presence of grades closer to the gold detection limit or reflect the natural heterogeneity of the gold mineralization (e.g., nugget effect) in those grade ranges.



**Figure 11.9 – Precision versus average gold grades for duplicate-original pairs grading  $\geq 0.1$  g/t: pulp (blue), coarse (red) and field (green).**

## 11.6 Conclusions

InnovExplo reviewed all the available information pertaining to the sample preparation, security and analytical procedures as well as insertion rates and the performance of blanks, standards and duplicates. The author concludes that the observed failure rates are within expected ranges and that no significant assay biases are present.

InnovExplo is of the opinion that proper QA/QC practices were applied by the issuer's team during the 2012 and 2014 programs and that the results are adequate and of good quality. InnovExplo confirms that industry best practices were followed and well-documented during the 2017-2018 program.

InnovExplo recommends closer follow-up on duplicates and prioritizing smaller and more regular shipments to avoid queuing at the laboratory and to avoid the possible loss of batches of samples.

In InnovExplo's opinion, the procedures followed at the Nampala Project follow industry best practices and the quality of the assay data is valid and reliable to support a mineral resource estimate.

## 12. DATA VERIFICATION

The drill hole database provided by the issuer (the “Robex database”) contains all drilling assays before the 2017-2018 program. The drill hole database from the 2017-2018 program (the “InnovExplo database”) was built and managed by InnovExplo. Both databases were merged and homogenized into the database for the mineral resource estimate of 2018 (the “2018 MRE database”). The 2018 MRE database includes all assays received by the official close-out date of June 21, 2018. There are no assay result pending issues at the close-out date.

In addition to numerous site visits, InnovExplo’s data verification included a thorough and independent review of all historical data, collar locations, assays, the QA/QC program, downhole survey data, lithologies, alteration and structures. InnovExplo directly supervised all data acquisition and management during the 2017-2018 program.

The 2018 MRE database contains 1,033 drill holes, including a total of 303 new holes since the 2012 resource estimate (Marchand, 2012).

The project coordinate system is UTM WGS84 Zone 29.

### 12.1 Robex Database

#### 12.1.1 Drill hole locations

Most of the drill hole collars in the Robex database were professionally surveyed. The collars before February 2012 were partially surveyed by UNIVERS-TOPO SARL using two Leica TC805 Total Station devices and one Pentax R326-EX. The rest were surveyed with a handheld GPS. From February 2012 to May 2014, the collars were surveyed with a handheld GPS.

#### 12.1.2 Downhole surveys

Downhole surveys were not systematically performed in historical drill holes or those from the 2012 Program. Only 19.5% of DDHs less than 100 m deep were surveyed, whereas deeper holes had 93.6% survey rate. None of the RC holes were surveyed.

When performed, downhole surveys until the end of 2009 were completed at intervals of 30 m, 50 m or 100 m, and as either single shots going downhole or multishots while pulling out the rods. From 2010 to May 2014, no downhole surveys were done in any of the RC or AC holes, and the collars were positioned by compass alignment only. In 2011, the DDHs were surveyed using a single shot test performed at the 12 m mark going downhole, and by multishot tests at 30 m intervals while pulling out the rods.

#### 12.1.3 Assays

InnovExplo was granted access to the original assay certificates for all holes drilled during the 2012 and 2014 programs. Gold assays were verified for 5% of the database.

The assays recorded in the database were compared to the original certificates from ALS Minerals.

Minor errors of the type normally found in a project database were found and corrected. The final database is of good overall quality.

## 12.2 InnovExplo Database

### 12.2.1 Data acquisition and database management

InnovExplo validated the 2017-2018 data and confirmed that data acquisition and database management followed the procedures and protocols described in Item 11.

### 12.2.2 Drilling and sampling procedures

For the 2017-2018 drilling program, InnovExplo supervised the entire path of the drill core from the rig to the logging and sampling facility to the laboratory. The procedure described in Item 11 were followed rigorously.

Figure 12.1 shows the onsite logging and storage facilities.



**Figure 12.1 – A) Core logging facility; B) Core storage hanger; C) Protected temporary storage for rejects**

### 12.2.3 Drill hole locations

InnovExplo was systematically involved in the collar positioning during the 2017-2018 program. The drill sites were initially located using a handheld Garmin GPSMAP 76CSX. The site was then cleared and levelled with a bulldozer, and the mine surveyors followed with a high-precision Leica 1200 series GPS. After drilling the hole,

Robex's surveyors measured the final collar location. The authors concluded that the surveyed collar locations recorded in the database are adequate and reliable.

#### 12.2.4 Downhole survey

Downhole surveys were completed as single shot tests during drilling (every 30 m) and as multi-shot surveys (every 6 m) while pulling out the rods. Deviation tests were performed every 30m during drilling to monitor azimuth and plunge. Deviation tests were electronically transferred to the GeoticLog database. The downhole survey data are considered adequate and reliable.

#### 12.2.5 Assays

Assays were subjected to thorough QA/QC process. To each batch was added one standard, one field duplicate as either half-core for DDH or a second sample of RC cuttings, and one blank. The final database is considered valid and reliable.

#### 12.3 Mined-out Voids

The 3D surface of the Nampala mine pit in the 2018 MRE database was directly obtained from Robex mine surveyors. This void was depleted from the resource. The pit and its immediate surroundings are known to have mine openings (tunnels) that were excavated by artisanal miners (orpailleurs). These are present close to the surface and are considered minor volumetrically and not material to the resource.

#### 12.4 Independent Resampling

Independent resampling was completed by InnovExplo on 16 samples from the 2011 drilling program.

The 16 samples were re-tagged and sent to the SGS laboratory to check the gold value by fire assay (FAA505). Table 12.1 presents the comparison of the re-assays to the original values.

**Table 12.1 – Comparison of re-assays to original values (2011 campaign)**

Sample ID 2011	Sample ID 2018	Reassay (FAA505) (g/t Au)	A:Original value (g/t Au)	Original vs Reassay (g/t Au)	(Original - Reassay) /Original)*100 (%)
67858	005914	1.64	1.21	-0.43	-35.5
67877	005915	0.29	0.72	0.43	59.7
67945	005916	0.03	4.44	4.41	99.3
68382	005917	0.005	0.81	0.805	99.4
68629	005918	1.87	4.28	2.41	56.3
68655	005919	0.64	1.03	0.39	37.9
68714	005921	1.97	1.63	-0.34	-20.9
68717	005922	0.33	0.42	0.09	21.4
69131	005923	0.65	0.7	0.05	7.1



Sample ID 2011	Sample ID 2018	Reassay (FAA505) (g/t Au)	A:Original value (g/t Au)	Original vs Reassay (g/t Au)	(Original - Reassay) /Original)*100 (%)
69093	005924	0.74	0.66	-0.08	-12.1
69352	005925	1.23	1.29	0.06	4.7
69455	005926	0.29	0.58	0.29	50.0
69487	005928	2.06	1.57	-0.49	-31.2
70738	005929	0.68	0.76	0.08	10.5
71200	005930	1.09	1.17	0.08	6.8
71809	005931	1.04	2.76	1.72	62.3
					Absolute Mean = 38.5

These results show some variability reflecting the natural heterogeneity (e.g., nugget effect) of the Nampala gold mineralization, with some higher grades returning lower values and vice versa (lower grades returning higher values). The average variation of 38.5% illustrates that the original values have the same range of values as the re-assays. InnovExplo concludes that the independent resampling confirms the reproducibility of historical results and that they can be used for the 2018 MRE.

## 12.5 Conclusion

The 2018 MRE database is of good quality and is considered by the authors to be of sufficient quality to be used for a resource estimate. The independent resampling of historical holes confirms both the occurrence of gold and the order of magnitude for the grades within normal variations expected for a gold deposit having a nugget effect. Results obtained from the recent drilling program (2017-2018) and from the current mining operations (in the Nampala pit) also confirm the accuracy of historical data on the location, geometry and grades of the mineralized zones. InnovExplo's data validation resulted in some minor changes to the original dataset.

### **13. MINERAL PROCESSING AND METALLURGICAL TESTING**

The project is currently in operation and details on mineral processing, recovery methods, milling facilities and mining operation are discussed in Item 24.

No additional mineral processing or metallurgical tests have been conducted since the tests documented in the previous NI 43-101 report (Marchand, 2012).

## 14. MINERAL RESOURCE ESTIMATE

The 2018 Mineral Resource Estimate (the “2018 MRE”) for the Nampala gold mine (the “Project”) was prepared by Alain Carrier, M.Sc., P.Geo., of InnovExplo, using all available information.

The main objective of the mandate assigned by the issuer was to complete a new mineral resource estimate following the 2017-2018 diamond drilling program.

The mineral resources herein are not mineral reserves as they do not have demonstrated economic viability. The result of this study is a single resource estimate for multiple gold zones hosted in four weathering profiles (laterite, saprolite, transition and fresh rock). The 2018 MRE comprises Indicated and Inferred resources and is based on the assumption that the deposit will continue to be developed and mined using an open pit method.

The effective date of the estimate is July 15, 2018.

### 14.1 Grade Model Methodology

The resource area measures 2.90 km long, 2.45 km wide and 0.48 km deep. The 2018 MRE is based on a compilation of historical and recent drill holes and on the mineralized zone solids constructed by InnovExplo.

The 2018 MRE detailed in this report was prepared using Leapfrog Geo v.4.3.1 (“Leapfrog”) and GEOVIA GEMS v.6.8.1 (“GEMS”) software. Leapfrog was used to model the geological units in 3D. GEMS was used to model the five (5) mineralized zones (Main, East, Intrusive, South and West) as 17 individual 3D solids, and to perform grade estimations and block modelling. Statistical studies were performed in Snowden Supervisor v.8.9.0.1 (“Supervisor”) and Microsoft Excel software. The 2018 MRE is based on 3D block modelling interpolated by the ordinary kriging method. The 2018 MRE is constrained within a Whittle pit shell.

The main steps in the methodology were as follows:

- Database compilation, QA/QC review and validation for all drill holes used in the mineral resource estimate;
- 3D modelling has included mineralized zones, some geological units and each weathered profile;
- Generation of drill hole intercepts for each mineralized zone;
- Basic statistics and capping study on raw assay data;
- Grade compositing;
- Spatial statistics;
- Grade interpolations;
- Model validation;
- Pit shell constraints for the resource model;
- Resource classification.

## 14.2 Drill Hole Database

The GEMS database contains results from the recent (2017-2018) drilling program as well as previous drilling results provided by the issuer. The previous results include 876 holes: 35 surface diamond drill holes (“DDH”) (7,164 samples); 156 surface reverse circulation (“RC”) holes (10,391 samples); 369 surface air core (AC) holes (26,422 samples); and 316 surface rotatory air blast (“RAB”) holes (6,919 samples). The recent results include 157 holes: 40 surface DDH (5,143 samples); and 117 surface RC holes (11,406 samples). The 2017-2018 program was completed under InnovExplo’s direct field supervision. The close-out date for the drill hole database was June 21, 2018.

A selection of 1,033 drill holes was considered for the 2018 MRE (Figure 14.1). As part of the current mandate, all holes were compiled and validated before starting the estimation process.

The 1,033 drill holes cover the strike length of the Project at a drill spacing ranging from 20 to 100 m. They correspond to 84,331 m of drilling (81,143 m of which was sampled), and they yielded 65,871 samples in 1,466 mineralized intervals in the zones and dilution envelopes.

In addition to the basic tables of raw data, the GEMS database includes several tables containing the calculated drill hole composites and wireframe solid intersections required for statistical analysis and resource block modelling.

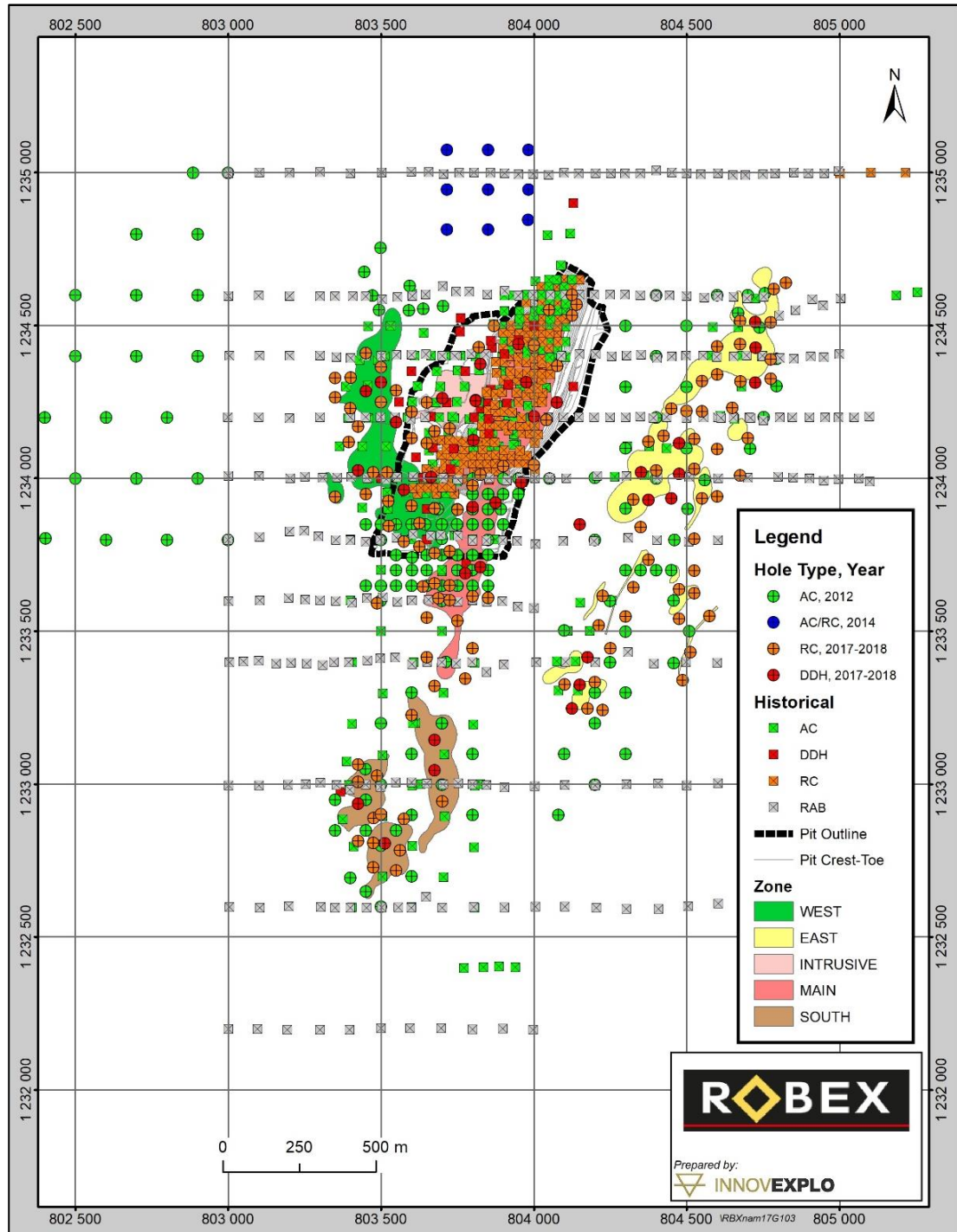


Figure 14.1 - Location of the drill hole collars used in the 2018 MRE, coloured-coded by drilling method

### 14.3 Geological Model

A 3D geological and structural model was developed by InnovExplo after onsite structural analysis using drill core logs and open pit geological mapping of the Project. The main modelled lithological units of the deposit area are the granodioritic intrusives, the key shale units, and the tensional quartz vein domains.

The subvertical shale units trend NNE-SSW and are barren, limiting the extent of gold mineralization. Greywacke and, to some extent, the intrusive rocks are the main hosts of the gold mineralization and quartz vein domains. The geological model constitutes the basis for the interpretation of mineralized zones.

### 14.4 Weathering Profile – Interpretation of Supergenic Layers

For the 2018 MRE, the weathering profiles (supergenic layers) affecting the rock sequence of the Project were re-interpreted. Lithologies were affected by saprolitization and lateritization processes that created supergenic layers with distinct 3D geometries. Differences in the intensity of the weathering process directly influenced some resource parameters, such as density (for tonnage estimation), rock hardness (for mining and processing cost assumptions for the minimum cut-off grade), and proportion of sulphide versus oxide (for mill recovery rate and processing cost assumptions).

The resulting 3D model of the supergenic layers comprises six layers corresponding to the following (in stratigraphic order from top to bottom):

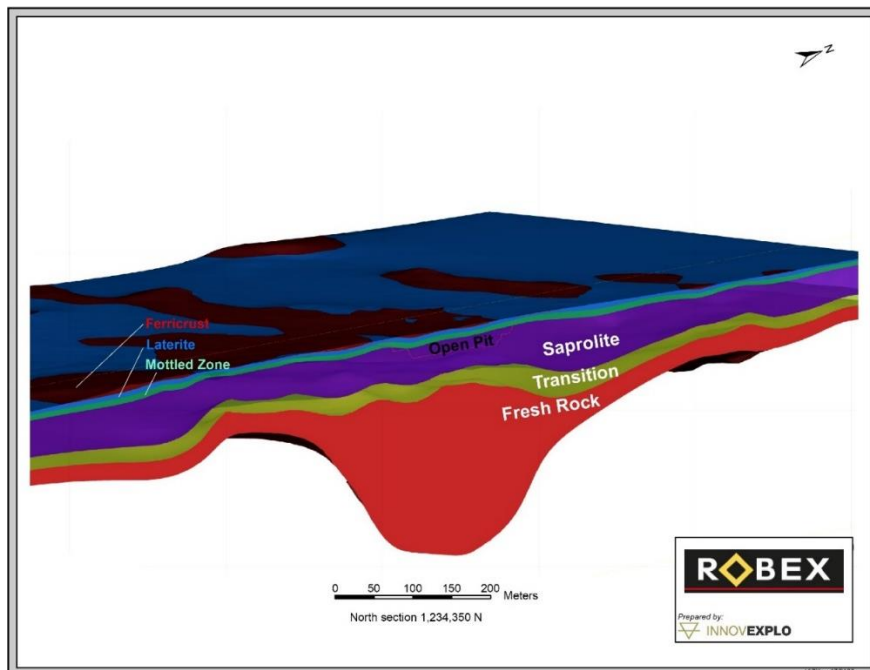
- Ferricrete
- Laterite
- Mottled clays
- Saprolite
- Transition (often called “Sap-Rock”)
- Fresh rock (bedrock)

This model was created in Leapfrog using the stratigraphic type of modelling combined with polylines to control the stratigraphic order, where needed (Figure 14.2).

Also, it was decided that the holes from the 2017-2018 program would have precedence over the historical database whenever a contradiction arose in the interpretation between the two datasets (Table 14.1).

**Table 14.1 – Equivalence of terminologies for supergenic layers**

Historical database terminology	2017-2018 drilling terminology
L1	Ferricrete
L2	
S1	Laterite
S2	
L3	Mottled clays
S3	Saprolite
S4	
S5	
S6	
L4	
R0	Transition
R1	
L5	
L6	Fresh rock
R2	
R3	
R4	
R5	
L7	



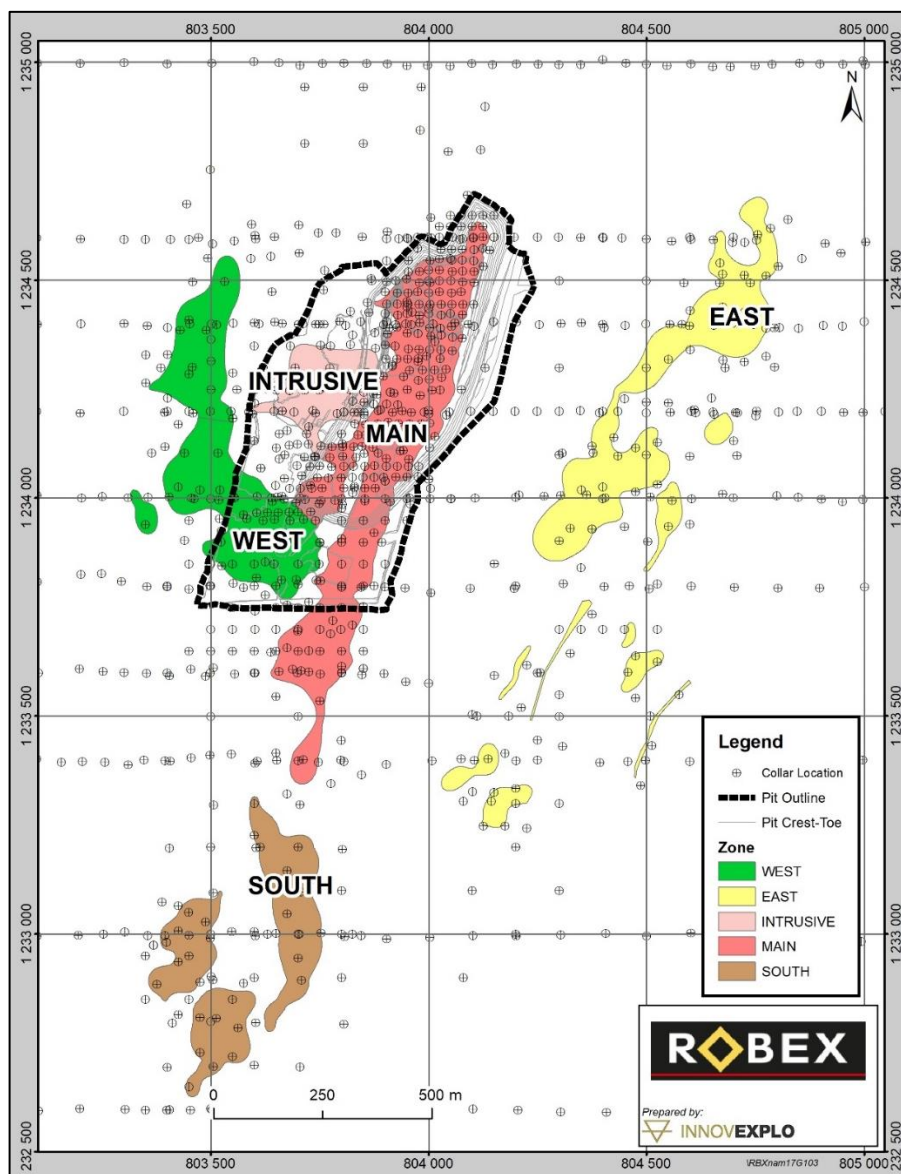
**Figure 14.2 – 3D perspective view of the supergenic layers**

## 14.5 Interpretation of Mineralized Zones

To better constrain the resource estimation for the Project, InnovExplo generated a 3D interpretation of five (5) main mineralized zones (Figure 14.3). Each mineralized zone includes one or multiple 3D solids corresponding to individual mineralized domains (Table 14.2).

Seventeen (17) domains were defined based on geological criteria (rock types, alteration, quartz veins and gold mineralization).

The 3D interpretation was done in Leapfrog, by creating interpolated meshes controlled by polylines. GEMS was also used for the tweaking of minor details.



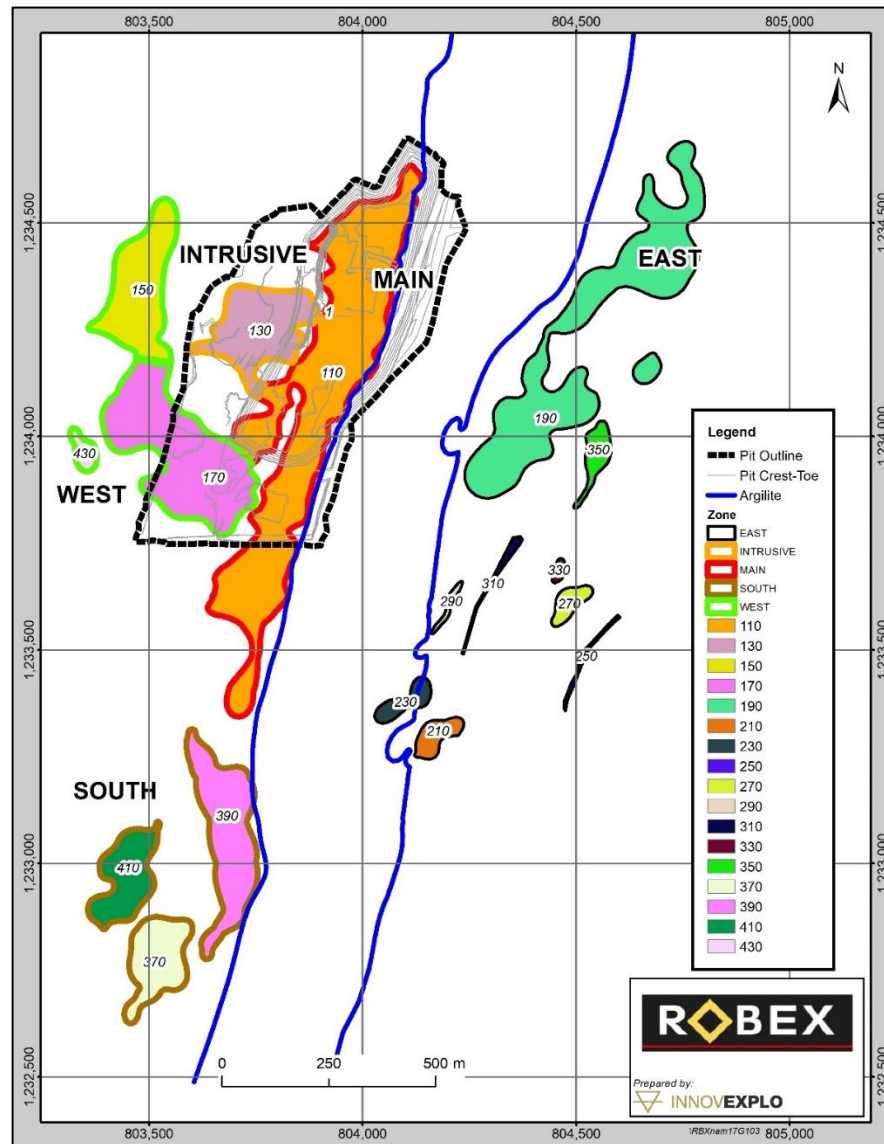
**Figure 14.3 - Location of the five broad mineralized zones in relation to each other and the current open pit (as at June 26, 2018)**



**Table 14.2 – Summary of the Nampala deposit zones and their associated domains:**

Zones	Mineralized Domains
Main	110
Intrusion	130
West	150, 170, 430
East	190, 210, 230, 250, 270, 290, 310, 330 and 350
South	370, 390 and 410

The five mineralized zones of the Nampala deposit are found within an area of approximately 1.2 km x 2.4 km. For each zone, the domains consist of occurrences of veinlets or stockworks with disseminated sulphides hosted in either wacke/siltstone or intermediate to mafic intrusives. All have been delineated using an approximate grade of 0.1 g/t Au and 3D wireframes over a minimum true thickness of 2 m. Most of the mineralized zones form NNE-SSW trending subvertical envelopes. Within these mineralized zones, the style (tensional to shear) and geometry (flat, shallow dipping to more vertical) of the mineralized quartz veins and veinlets can vary and were captured by the creation of the different domains. These styles include stockwork-type veins and veinlets, conjugated veinlets, or veinlets of a single preferred orientation that can vary locally. The zones are not spatially restricted to any particular layer; they extend from deep in the fresh rock to the ferricrete layer at the surface.



**Figure 14.4 - Location of all mineralized domains and subdomains in relation to the five main mineralized zones, the central shale unit (blue outline) and the current open pit (as at June 26, 2018)**

### 14.5.1 Main Zone

The Main Zone englobes most of the actual open pit mine and extends southward. It follows a general N200° steeply dipping trend corresponding to the wacke unit. It is about 1,400 m long by 200 m wide. The Main Zone is limited to the east by the central shale and to the west by the granodioritic intrusion contact. In its southern half, a wedge of barren graphitic shale runs through its center to create a trouser-like shape. The zone starts from surface and is currently interpreted to a depth of 120 to 390 m. It is composed of a single solid or domain (110) (Figure 14.4).

#### **14.5.2 Intrusion Zone**

The Intrusion Zone is found in the centre of the Nampala dioritic intrusion, just west of the current Nampala open pit. It is observed in the western wall of the pit. It is locally connected to the Main Zone and has very irregular borders. Its shape is crescent-shaped with a diameter of roughly 200 m. It extends from the surface to a depth of 200 m. It is composed of a single solid or domain (130) (Figure 14.4).

#### **14.5.3 West Zone**

The West Zone encompasses everything west and southwest of the main dioritic intrusion and is composed of a large solid representing the west border of the main dioritic intrusion, which is separated into two domains (150 and 170) as well as a third domain, smaller and isolated, to the west (430) (Figure 14.4).

#### **14.5.4 East Zone**

The East Zone is composed of nine solids or domains of various shapes and sizes. They are all located in the greywacke unit directly to the east of the graphitic shale. Some of the domains seem to be associated with a series of small dioritic stocks (Figure 14.4).

#### **14.5.5 South Zone**

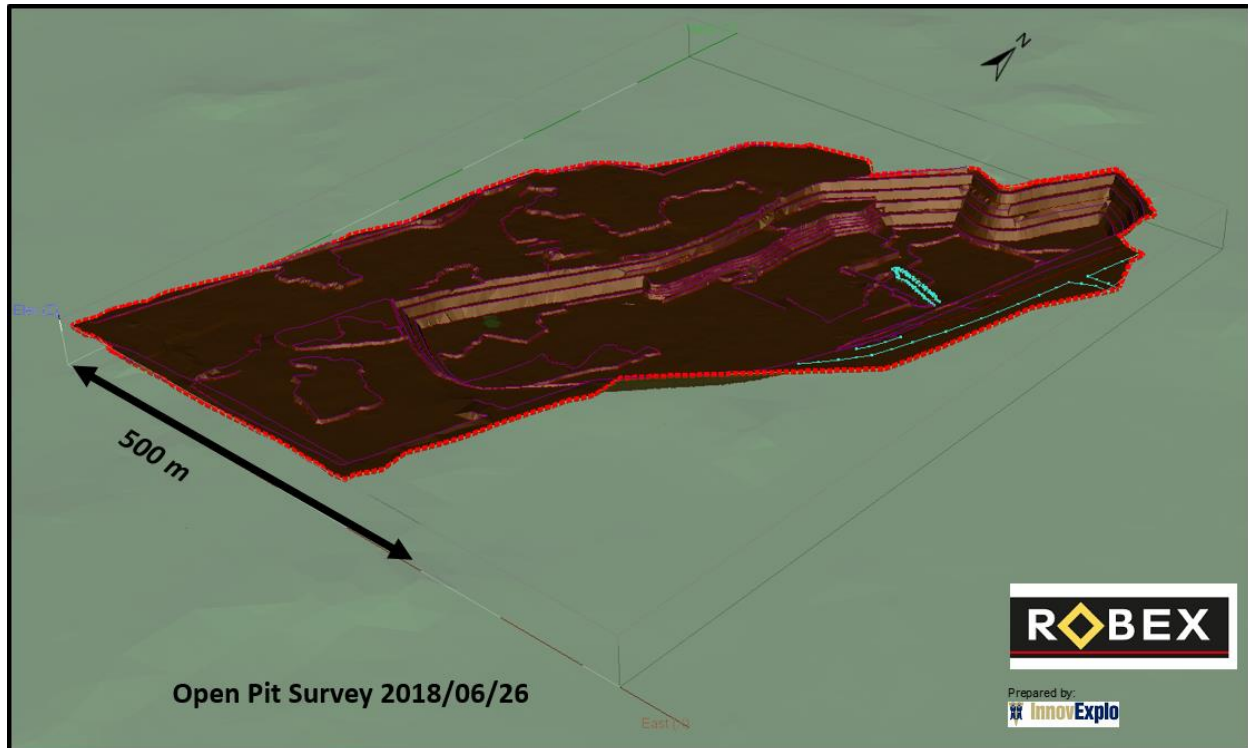
The South Zone consists of three different domains arranged in a roughly circular pattern spatially associated with a group of small dioritic intrusives. It is located 100 m to 700 m south of the southern end of the Main Zone. The South Zone is hosted within the main greywacke unit (Figure 14.4).

### **14.6 Open Pit and Voids Model**

The topographic surface was generated using the Nampala open pit surface (i.e., surveyed points and lines (crests and toes) as at June 26, 2018), the 2017-2018 drilling program data and merged with regional topography surface. Resource depletion for the open-pit area was applied in the block model and treated as voids.

Based on the available data, the mined-out volume (current open pit) is considered accurate.

Figure 14.5 shows the open pit (as at June 26, 2018) used to deplete the current resource estimate.



**Figure 14.5 – Open pit shell as at June 26, 2018**

## 14.7 High-Grade Capping

Any drill hole interval intersecting an interpreted mineralized zone was automatically assigned a code based on the name of the 3D domains, and the coded assays in the interval were used to analyze sample lengths and generate statistics for high-grade capping and composites.

Basic univariate statistics, probability plots and histograms were performed and reviewed on datasets of individual raw gold assays for each zone and for the dilution envelopes.

The following criteria were used to decide whether capping was warranted or not, and to determine the threshold when warranted:

- If the quantity of metal contained in the last decile is above 40%, capping is warranted; if below 40%, the uncapped dataset may be used;
- No more than 10% of the overall contained metal must be contained within the first 1% of the highest-grade samples;
- The probability plot of grade distribution must not show abnormal breaks or scattered points outside of the main distribution curve;
- The log normal distribution of grades must not show any erratic grade bins or distanced values from the main population.

High grade capping values for gold were established per zone and the capping was applied on raw assays before compositing. Table 14.3 presents a summary of the statistical analysis for each zone. Figure 14.6 to Figure 14.10 show graphs supporting the capping threshold decisions for the four (4) datasets.

**Table 14.3 – Summary statistics for the raw assays by zone**

Zones	Number of Samples	Max (Au g/t)	Uncut Mean (Au g/t)	Capping (Au g/t)	# samples cut	% samples cut	Cut Mean Au (g/t)	COV	% Loss Metal Factor
East	4,385	30.80	0.4	7	4	9	0.39	1.64	2.10
Intrusion	1,873	33.48	0.52	7	5	27	0.47	1.64	9.81
Main	17,887	441.97	0.55	14.5	19	11	0.51	1.92	6.27
South	1,987	14.00	0.26	4	5	25	0.26	1.92	2.46
West	4,709	29.60	0.34	7	5	11	0.33	2.17	2.53

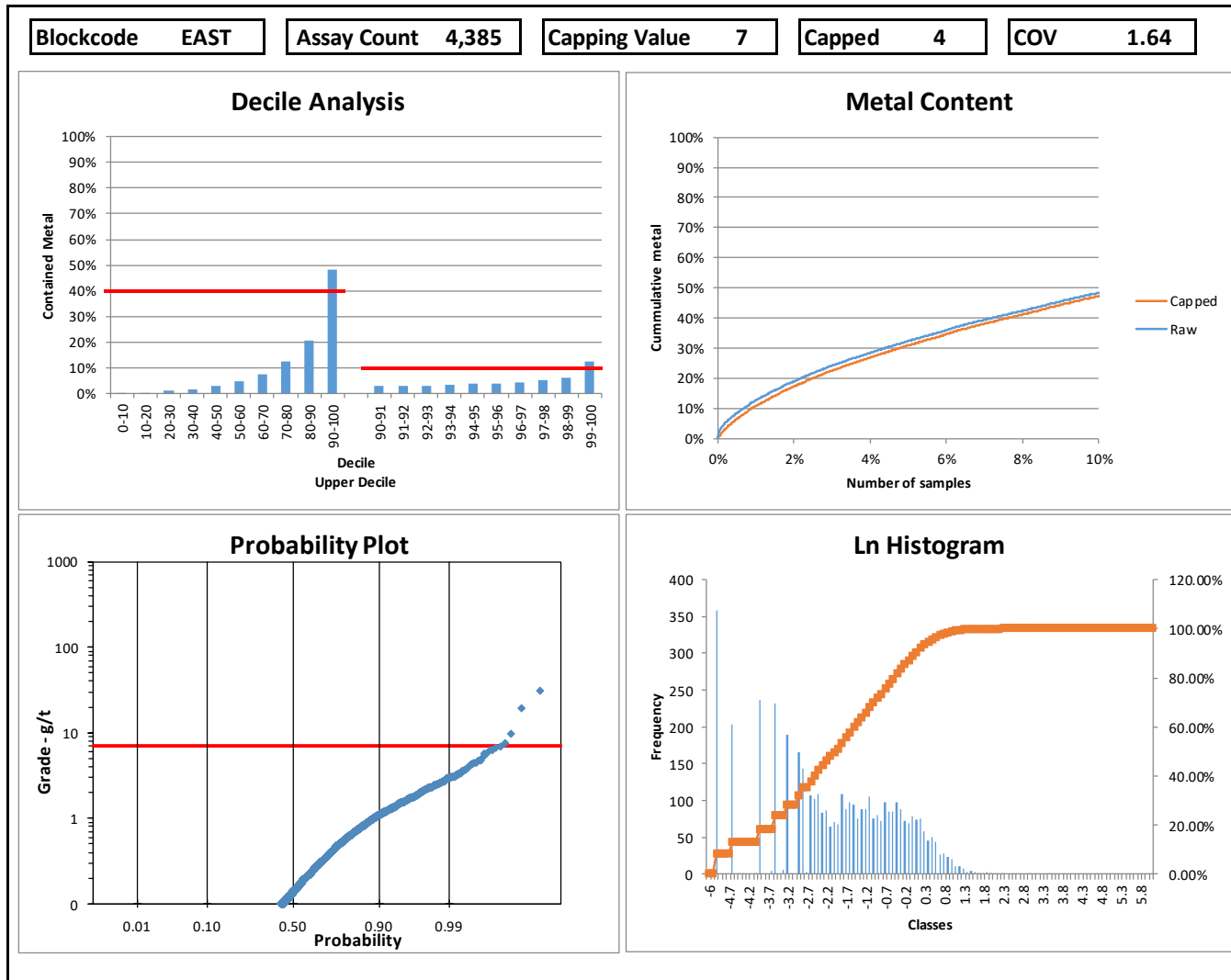


Figure 14.6 – Graphs supporting a capping grade of 7 g/t Au for the East Zone

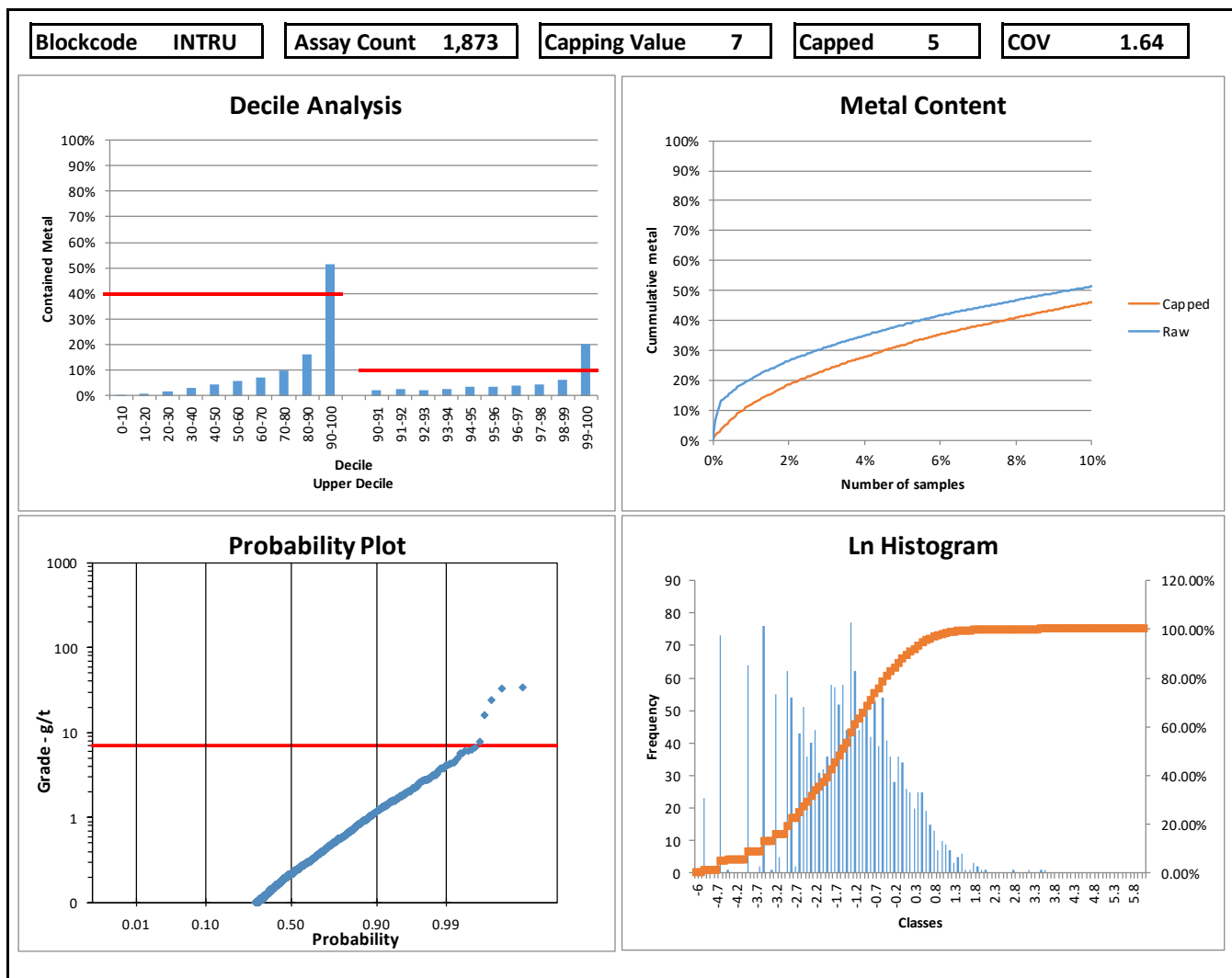


Figure 14.7 – Graphs supporting a capping grade of 7 g/t Au for the Intrusion Zone

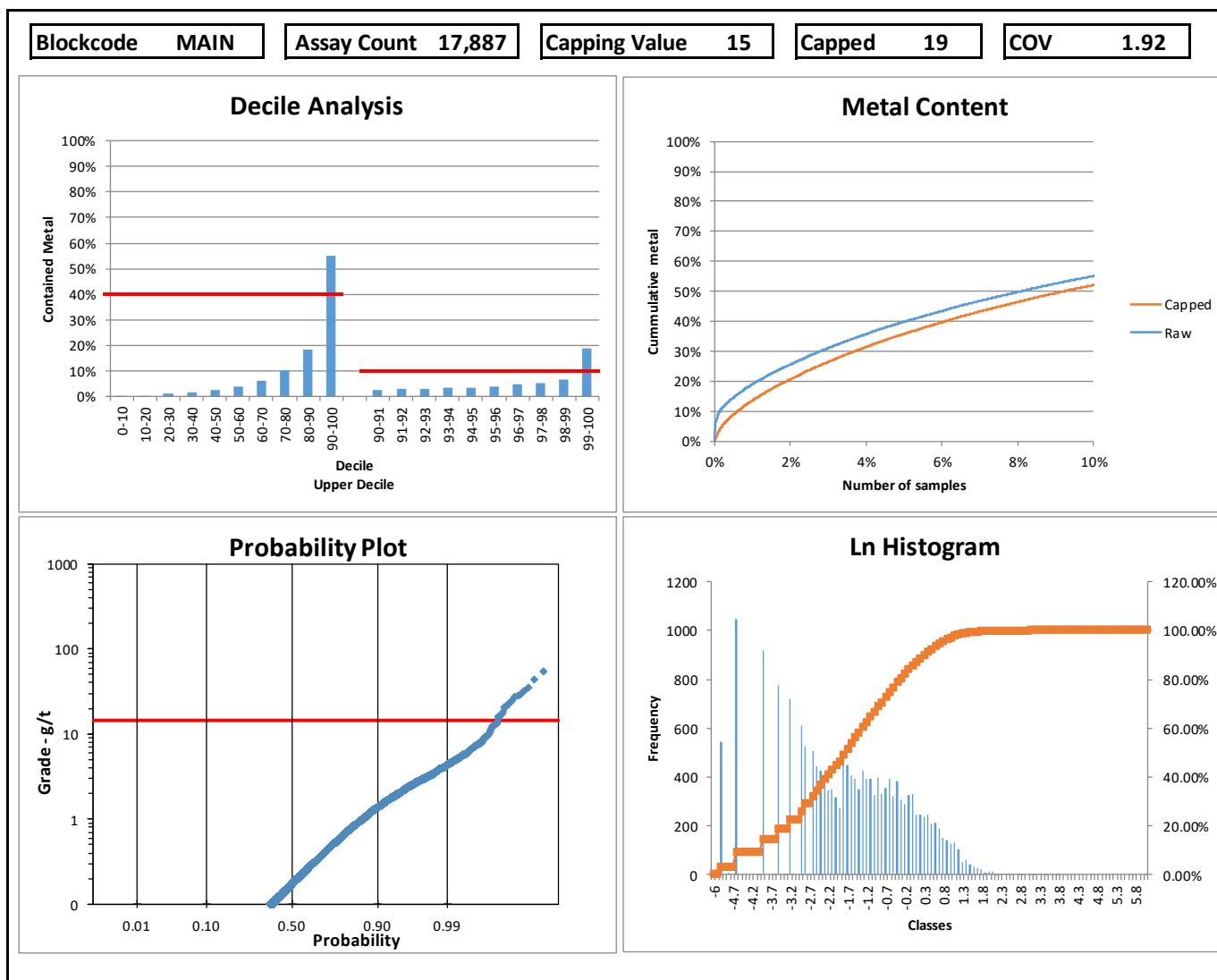


Figure 14.8 – Graphs supporting a capping grade of 14.5 g/t Au for the Main Zone



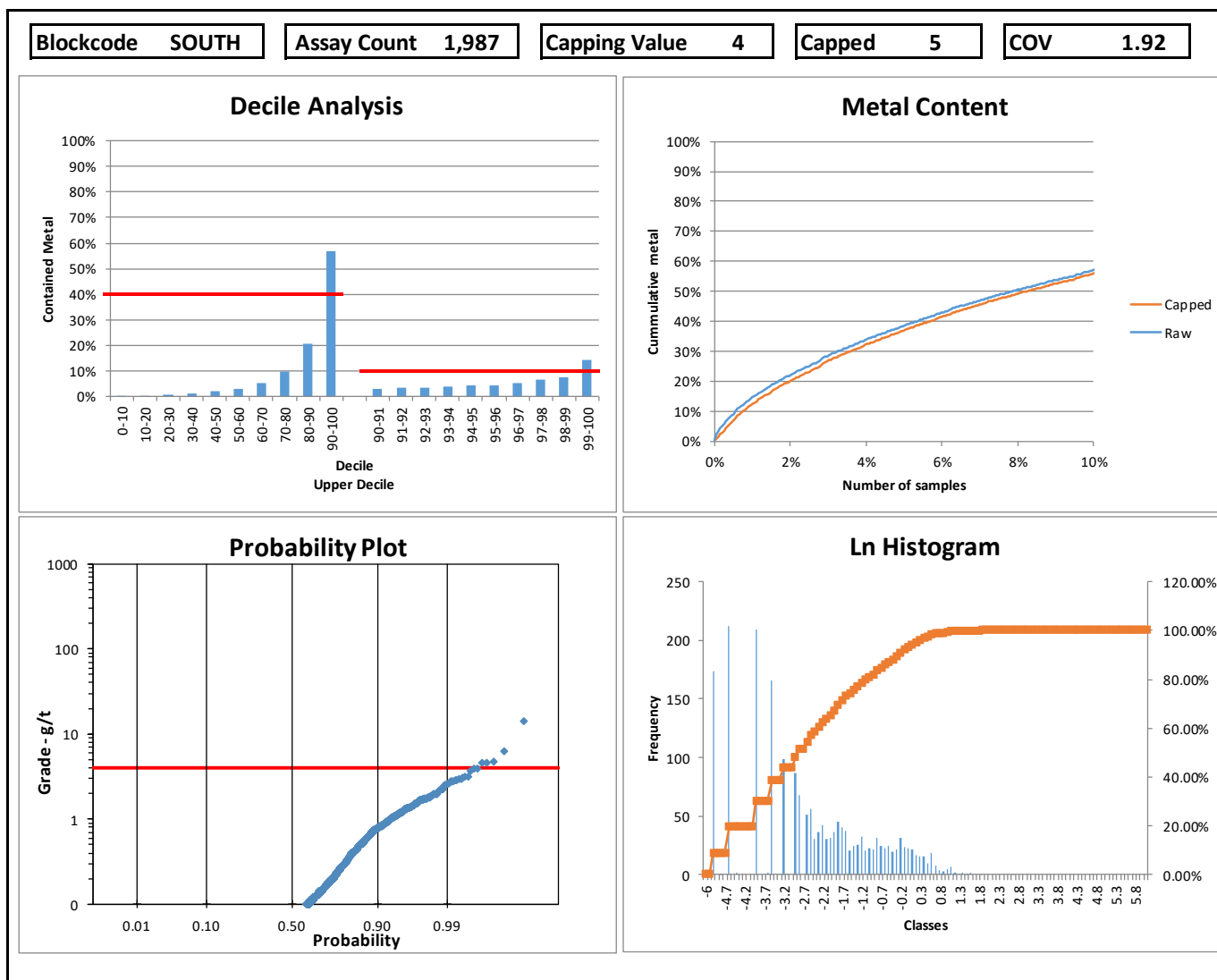


Figure 14.9 – Graphs supporting a capping 4.0 g/t Au for the South Zone

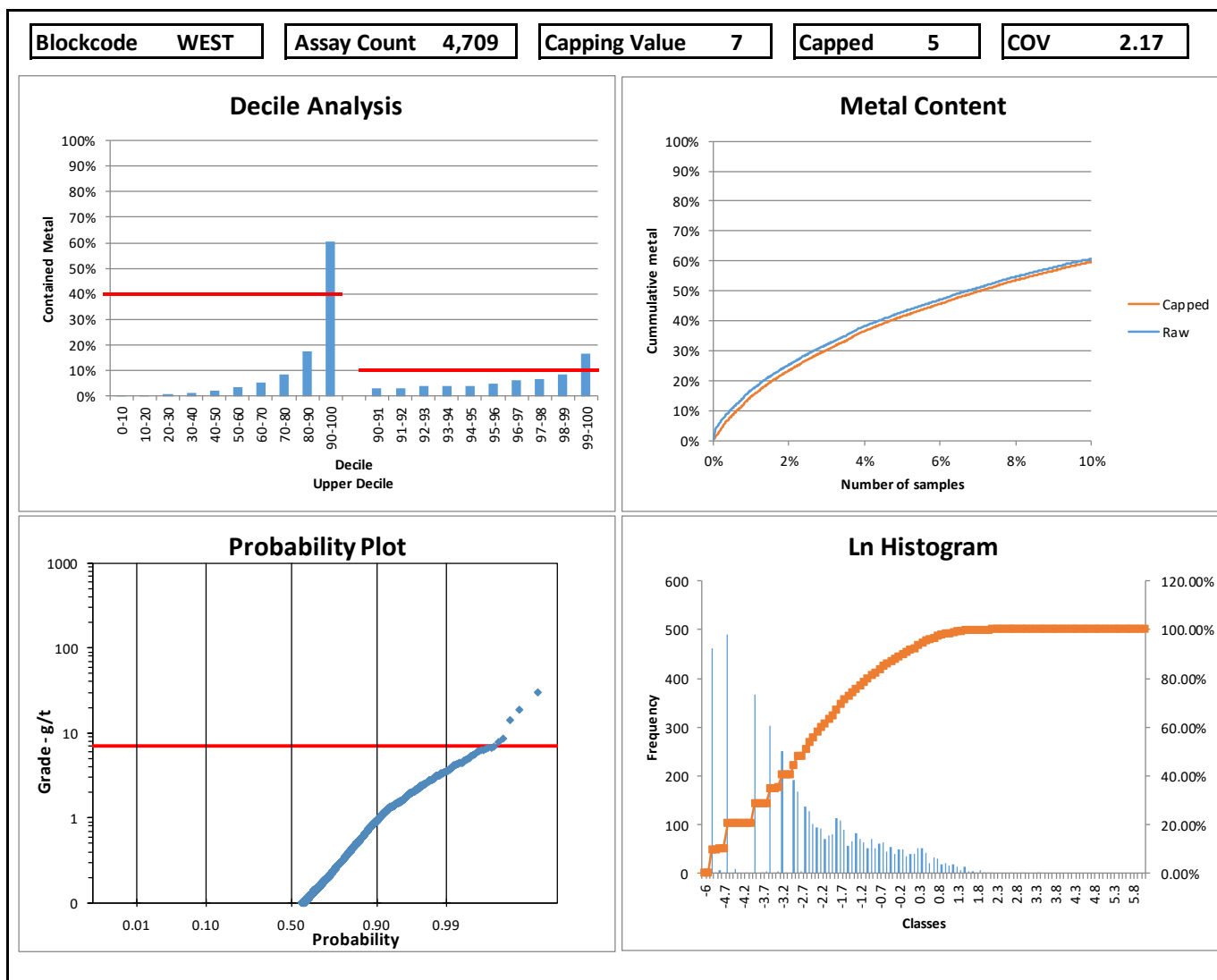


Figure 14.10 – Graphs supporting a capping 4.0 g/t Au for the West Zone

## 14.8 Compositing

In order to minimize any bias introduced by the variations in sample length, the capped gold assays data of the holes were composited within the dilution envelopes and within each mineralized domain. The width of the mineralized domain, the proposed block size and the original sample length were all taken into consideration when selecting the composite length.

Most of the samples inside the mineralized zones are between 0.2 m and 6.5 m long (Figure 14.11). Composites of 2.0 m (down hole) with distributed tails of 1.0 to 2.8 m were generated for all mineralized zones and dilution envelopes of the Project. This length avoids de-compositing, which occurs when a sample length exceeds composite length, and it provides a reasonable reconciliation with the raw data mean grade, while sufficiently reducing the coefficient of variation (“COV”). A total of 40,043 composites were generated in the GEMS database (17,265 zone intervals) using 30,871 raw assays. All unassayed intervals within solids were assigned a value of zero during the compositing. Table 14.4 summarizes the basic statistics for the gold composites.

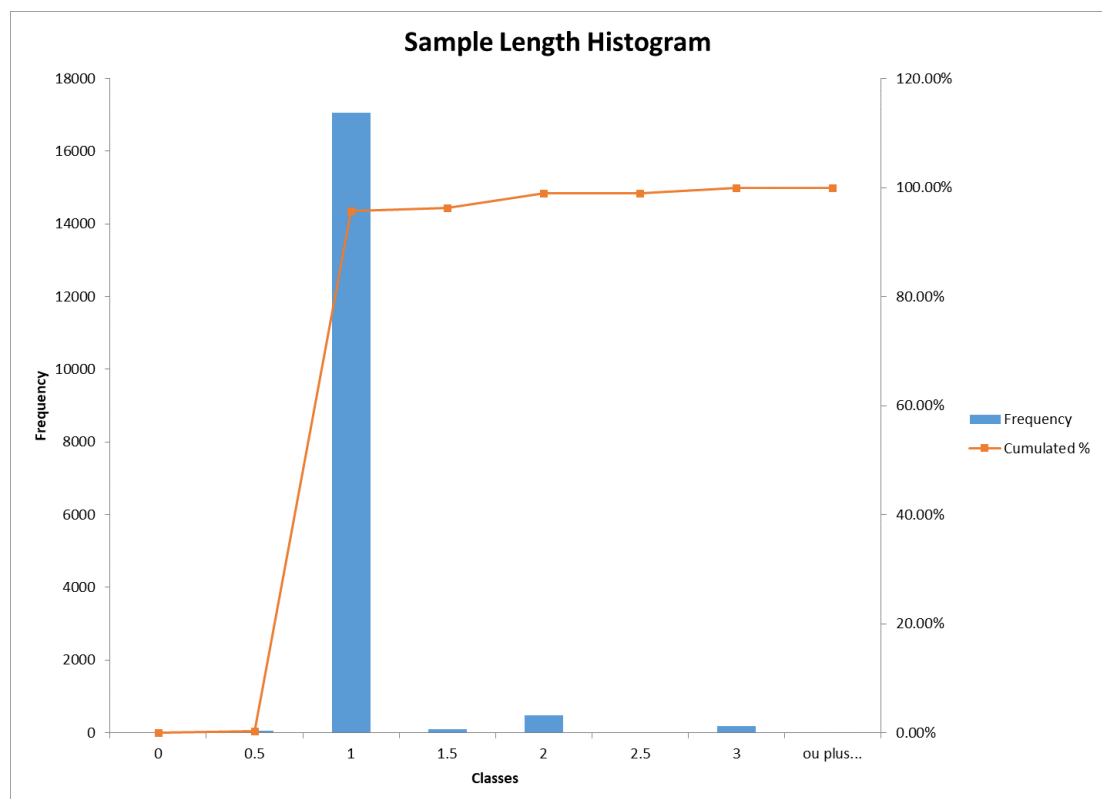


Figure 14.11 – Example of sample length histogram (Main Zone)

**Table 14.4 – Summary statistics for the 2.0 m composites**

Zone	Number of composites	Mean Sample Length (m)	Max (Au cut g/t)	Mean (Au cut g/t)	SD	CV
East	2,474	2.00	4.62	0.37	0.51	1.40
Intrusion	1,215	2.00	5.06	0.41	0.56	1.39
Main	9,593	2.00	14.50	0.49	0.78	1.59
South	1,098	2.00	3.58	0.25	0.40	1.59
West	2,885	2.00	6.84	0.29	0.55	1.89

## 14.9 Density

The descriptive statistics of the density measurement and the corresponding histograms were generated for five supergenic layers:

- Ferricrust
- Laterite
- Saprolite (Saprolite and Mottled clays combined)
- Transition
- Fresh Rock

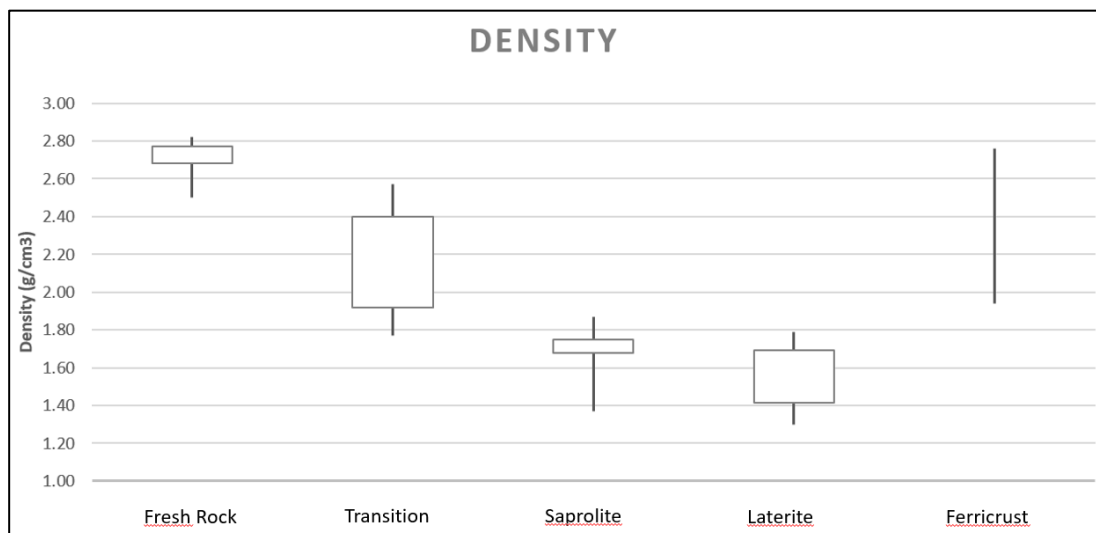
The bulk density value for each supergenic layer corresponds to the average value of each layer. Table 14.5 and Figure 14.12 shows the descriptive statistics and the box plot graph for the 10<sup>th</sup> to 90<sup>th</sup> percentiles, therefore eliminating any outlier effects.

Because the sample population for the Saprolite and Laterite zones was not a statistically meaningful size, these layers were attributed the same density in the block model (i.e. same as the saprolite). The mean of each supergenic layer was assigned to the related domains and envelopes.

Bulk densities were used to calculate tonnages from the volume estimates in the resource-grade block model.

**Table 14.5 – Density statistics for the supergenic layers**

Density	Fresh rock	Transition	Saprolite	Laterite	Ferricrete
25 percentile	2.68	1.92	1.68	1.42	
Max	2.82	2.57	1.87	1.79	2.76
Min	2.50	1.77	1.37	1.30	1.94
75 percentile	2.77	2.40	1.75	1.69	
<b>Mean</b>	<b>2.72</b>	<b>2.18</b>	<b>1.64</b>	<b>1.54</b>	<b>2.17</b>
Median	2.74	2.20	1.66	1.51	2.12
Quantity	585	174	415	24	10



**Figure 14.12 – Box plots of the densities by supergenic layer**

In 2016, InnovExplo conducted an extensive review of the density parameters presented in 58 technical reports (NI 43-101 compliant) for deposits in Western Africa. InnovExplo concluded that the density parameters for Nampala fall within the range of expected values for saprolitic and lateritic environments in the region. The Nampala density model is therefore considered appropriate to support a resource estimate.

#### 14.10 Block Model

A block model was established for the mineralized zones and the dilution envelope for the purpose of the 2018 MRE. The block model covers an area sufficiently large for open-pit optimization (i.e., Whittle pit shells used to estimate the resource). The model has been pushed to a depth of approximately 480 m below surface. The block model is not rotated (Y-axis oriented N000). The block dimensions (10 m x 10 m x 10 m) reflect the sizes of the mineralized zones and plausible mining methods.

Table 14.6 presents the properties of the Nampala block model.

**Table 14.6 – Block model properties**

Properties	X (Columns)	Y (Rows)	Z (Levels)
Origin coordinates (UTM WGS84, Zone 29N)	803,000	1,232,250	380
Number of blocks	245	290	48
Block extent (m)	2,450	2,900	480
Block size (m)	10	10	10
Rotation	0		

A multi-folder percent block model was generated, reflecting the proportion of each block inside every solid (individual mineralized zones and dilution envelopes and the

mined-out pit). All blocks with more than 0.001% of their volume falling within a selected solid were assigned the corresponding solid block code in their respective folder. Overlaps between solids were handled by the “precedence” system used by GEMS for coding the block model. The open pit voids had priority over mineralized zones, lithology wireframes and dilution envelopes.

Table 14.7 provides details about the naming convention for the corresponding GEMS solids, the rock/block codes assigned to each individual solid, and their precedence. The resulting multi-folder percent block model was used for the resource estimate.

**Table 14.7 – Block model naming convention and folder**

	RockCode	Block Code (Domain)	GEMS Solid Name			Precedence
			Name1	Name2	Name3	
Standard	Air	9999	Waste	20180530	Air	9999
Zone	ZBIW01	150	Zone Bordure Intrusif Ouest 01	20180522	Clipfinal	150
Zone	ZBIW02	170	Zone Bordure Intrusif Ouest 02	20180522	Clipfinal	170
Zone	ZE01	190	Zone Est 01	20180522	Clipfinal	190
Zone	ZE02	210	Zone Est 02	20180522	Clipfinal	210
Zone	ZE03	230	Zone Est 03	20180522	Clipfinal	230
Zone	ZE04	250	Zone Est 04	20180522	Clipfinal	250
Zone	ZE05	270	Zone Est 05	20180522	Clipfinal	270
Zone	ZE06	290	Zone Est 06	20180522	Clipfinal	290
Zone	ZE07	310	Zone Est 07	20180522	Clipfinal	310
Zone	ZE08	330	Zone Est 08	20180522	Clipfinal	330
Zone	ZE09	350	Zone Est 09	20180522	Clipfinal	350
Zone	ZI01	130	Zone Intrusif	20180522	Clipfinal	130
Zone	ZP01	110	Zone Principale	20180522	Clipfinal	110
Zone	ZS01	370	Zone Sud 01	20180522	Clipfinal	370
Zone	ZS02	390	Zone Sud 02	20180522	Clipfinal	390
Zone	ZS03	410	Zone Sud 03	20180522	Clipfinal	410
Zone	ZSAT01	430	Zone Sat 01	20180522	Clipfinal	430
Waste	Waste	999	Waste	20180530	waste	999
Supergene	CUI	30	CUI	20180515	ClipFinal	30
Supergene	LAT	40	LAT	20180515	ClipFinal	40
Supergene	MOTZ	50	MOTZ	20180515	ClipFinal	50
Supergene	SAP	60	SAP	20180515	ClipFinal	60
Supergene	TRA	70	TRA	20180515	ClipFinal	70
Supergene	ROC	80	ROC	20180601	ClipFinal	80
Void	VOID	25	Pit_volume	20180626	mb	

## 14.11 Variography and Search Ellipsoids

### 14.11.1 Variography

Three-dimensional directional variography was completed on 2.0 m DDH composites for the capped gold assay data for each domain. The study was carried out in Supervisor.

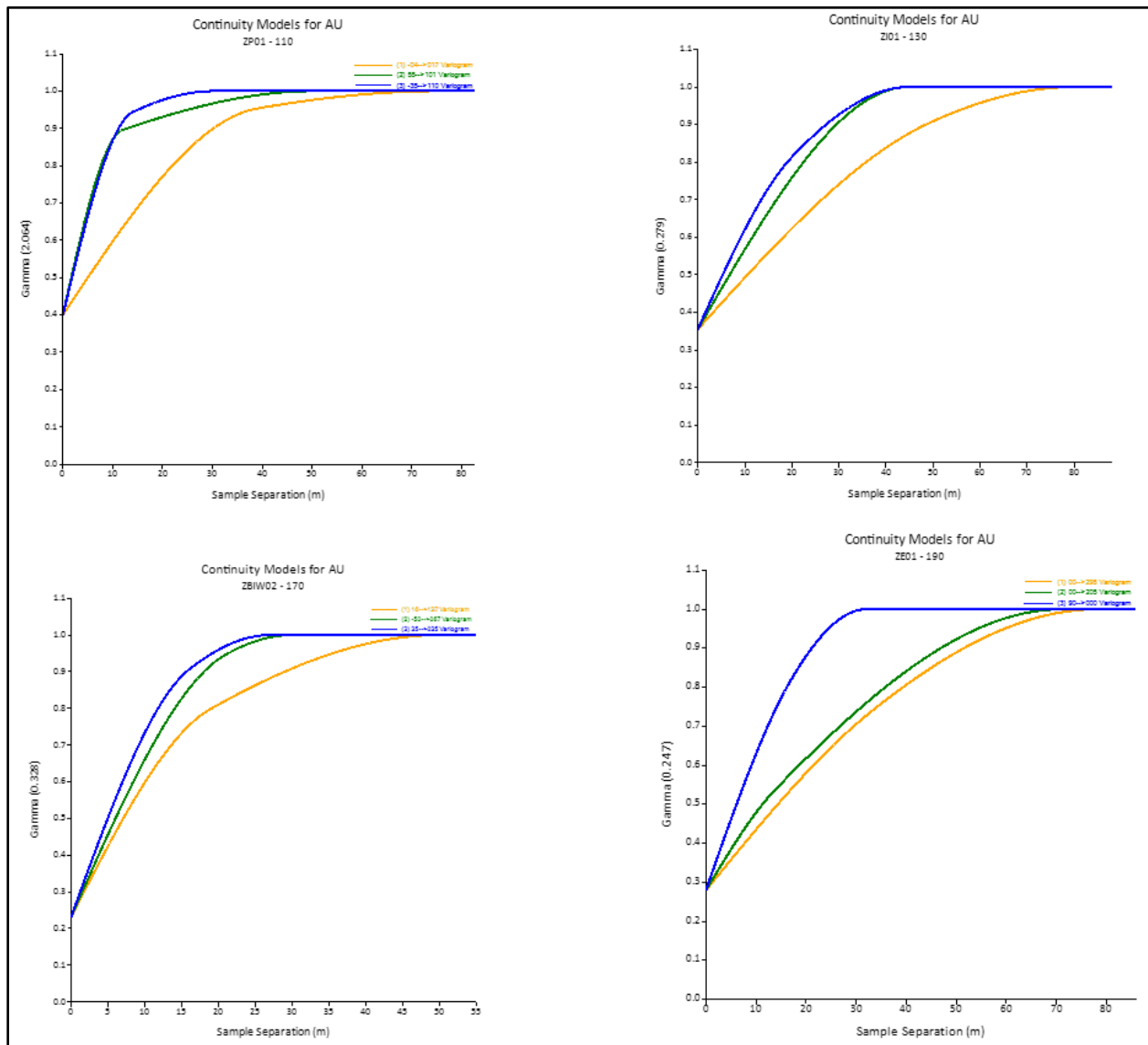
This study was conclusive on four (4) domains (110, 130, 170 and 190); other domains were inconclusive due to the lack of information. Variography results obtained from the four (4) domains were then applied to other domains from the same zone. It was decided to also apply the variogram results from the Main Zone (domain 110) to the dilution envelope.

The downhole variograms reveal a nugget effect ranging between 23% to 40%.

The experimental variograms were interpreted with 2-structure spherical models. The best fit variogram model parameters are presented in Table 14.8. Figure 14.13 shows the continuity model obtained for the different mineralized zones.

**Table 14.8 – Variogram model parameters for each group**

Dataset	Block code	Nugget	Model Type	First Structure			Second Structure				
				Sill	Range X (m)	Range Y (m)	Range Z (m)	Sill	Range X (m)	Range Y (m)	Range Z (m)
ZBIW01	150	0.23	Spherical	0.33	19	21	16	0.44	50	30	27
ZBIW02	170	0.23	Spherical	0.33	19	21	16	0.44	50	30	27
ZE01	190	0.28	Spherical	0.07	33	14	17	0.65	78	71	32
ZE02	210	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZE03	230	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZE04	250	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZE05	270	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZE06	290	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZE07	310	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZE08	330	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZE09	350	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZI01	130	0.35	Spherical	0.15	49	44	20	0.5	80	45	45
ZP01	110	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZS01	370	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZS02	390	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZS03	410	0.4	Spherical	0.44	39	12	14	0.16	75	50	30
ZSAT01	430	0.23	Spherical	0.33	19	21	16	0.44	50	30	27
Waste	999	0.4	Spherical	0.44	39	12	14	0.16	75	50	30



**Figure 14.13 – Continuity models for domains 110, 130, 170 and 190**

### 14.11.2 Search ellipsoid

Different search ellipsoids were built using the ranges of the best fit variogram models. For each specific domain, the best-fit model was adjusted to fit the mean orientation of the domain.

For the mineralized zone blocks, the interpolations were run in three cumulative passes using three sets of search ellipsoids characterized by increasing ranges of the best fit variogram model for each mineralized domain.

The ranges of the ellipsoids for the first interpolation pass correspond to two thirds (2/3) the variography results to interpolate the mineralized blocks close to the drill holes. The second pass interpolated the blocks that were not interpolated during the previous pass by using ellipsoid ranges corresponding to 1x the variography results.



The third (last) pass was defined to populate the remaining blocks within the mineralized domains and used a search ellipsoid range corresponding to 1.5x the variography results.

A single pass was used for the dilution envelope blocks, corresponding to two thirds (2/3) the variography range results.

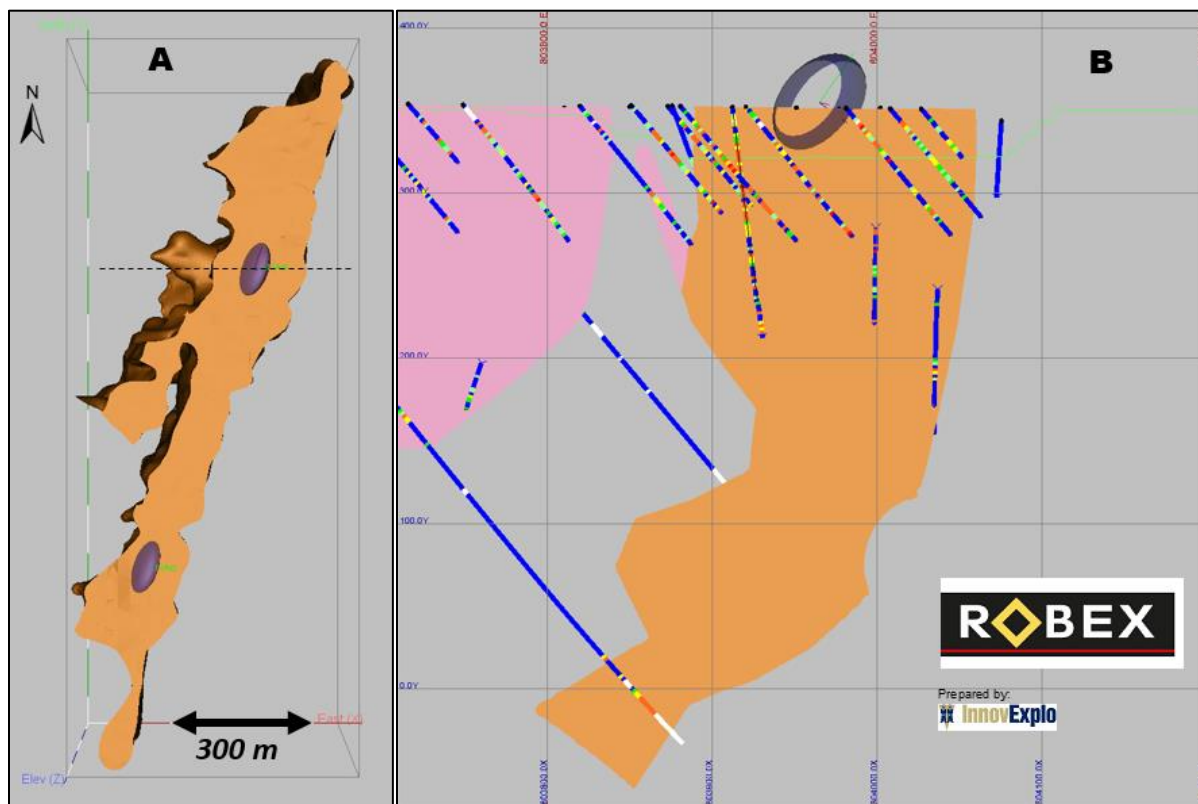
Table 14.9 summarizes the parameters of the final ellipsoids used for interpolation.

Figure 14.14 illustrates examples of shapes and ranges of search ellipsoids for the first interpolation pass.

**Table 14.9 – Search ellipsoid parameters**

Group	Block Code (domains)	Ellipsoid	Gems Orientation			Ranges		
			Az	Dip	Az	X (m)	Y (m)	Z (m)
ZBIW01	150	Pass 1	196.00	16.270	127.40	33.33	20.00	18.00
		Pass 2				50.00	30.00	27.00
		Pass 3				75.00	45.00	40.50
ZBIW02	170	Pass 1	136.79	16.270	67.40	33.33	20.00	18.00
		Pass 2				50.00	30.00	27.00
		Pass 3				75.00	45.00	40.50
ZE01	190	Pass 1	295.00	0.000	205.00	52.00	47.33	21.33
		Pass 2				78.00	71.00	32.00
		Pass 3				117.00	106.50	48.00
ZE02	210	Pass 1	17.12	-4.090	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZE03	230	Pass 1	17.12	-4.090	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZE04	250	Pass 1	17.12	-4.090	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZE05	270	Pass 1	17.12	-4.090	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZE06	290	Pass 1	17.12	-4.090	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZE07	310	Pass 1	17.12	-4.090	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZE08	330	Pass 1	17.12	-4.090	101.32	50.00	33.33	20.00

Group	Block Code (domains)	Ellipsoid	Gems Orientation			Ranges		
			Az	Dip	Az	X (m)	Y (m)	Z (m)
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZE09	350	Pass 1	17.12	-4.09	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZPI01	130	Pass 1	69.099	2.87	341.10	53.33	30.00	30.00
		Pass 2				80.00	45.00	45.00
		Pass 3				120.00	67.50	67.50
ZP01	110	Pass 1	17.12	-4.09	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZS01	370	Pass 1	17.12	-4.09	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZS02	390	Pass 1	347.13	-4.09	71.33	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZS03	410	Pass 1	17.12	-4.09	101.32	50.00	33.33	20.00
		Pass 2				75.00	50.00	30.00
		Pass 3				112.50	75.00	45.00
ZSAT01	430	Pass 1	138.79	16.27	67.40	33.33	20.00	18.00
		Pass 2				50.00	30.00	27.00
		Pass 3				75.00	45.00	40.50
Waste	999	Pass 1	17.12	-4.09	101.32	50.00	33.33	20.00
		Pass 2				NA	NA	NA
		Pass 3				NA	NA	NA



**Figure 14.14 – Plan view (A) and section view (B) of the Main Zone showing the search ellipsoid used for Pass 1**

## 14.12 Grade Interpolation

The parameters for interpolating the grade model were derived from the variographic study on the capped composites. The interpolation was run on a set of points providing the X, Y and Z locations and the gold grades extracted from the 2.0 m composites.

The composite points were assigned block codes corresponding to the mineralized domain in which they occur. The interpolation profiles specify a single composite block code for each mineralized solid/domain (hard boundary), except for the West Zone, domains 150 and 170 where the composites were shared (soft boundary).

The interpolation profiles were customized to estimate grades separately for each folder in the block model.

The interpolation profiles were customized to estimate grades separately for each folder in the block model.

The results of three different interpolation methods were compared: Ordinary Kriging (“OK”), Nearest Neighbour (“NN”), and Inverse Distance squared (“ID2”).

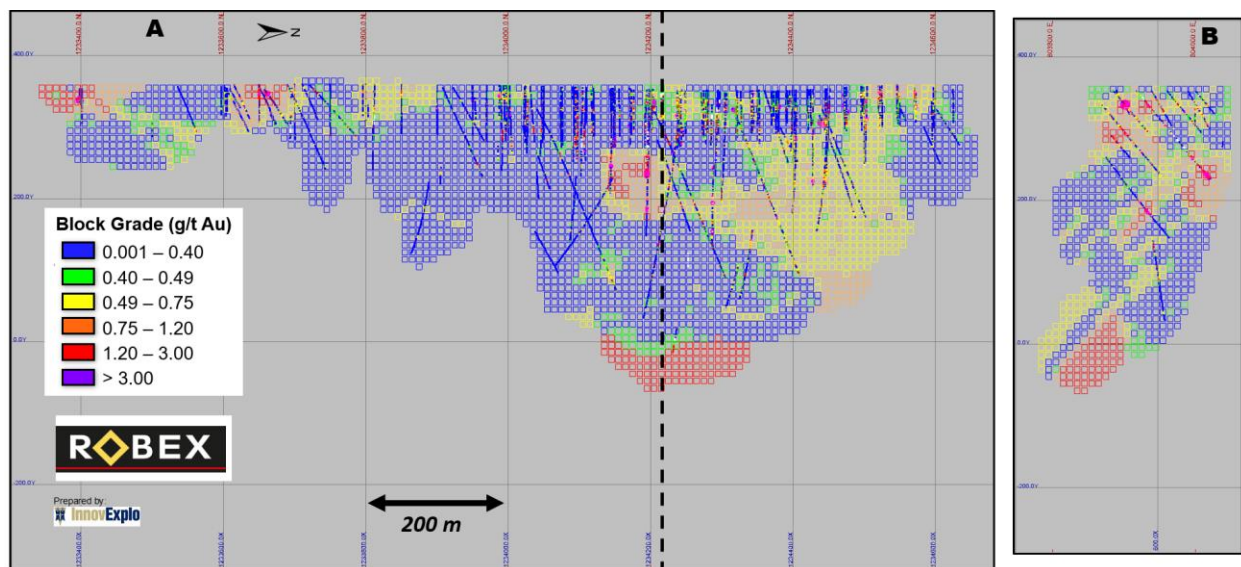
The OK method was selected for the final resource estimate.

The composite search specifications are presented in Table 14.10.

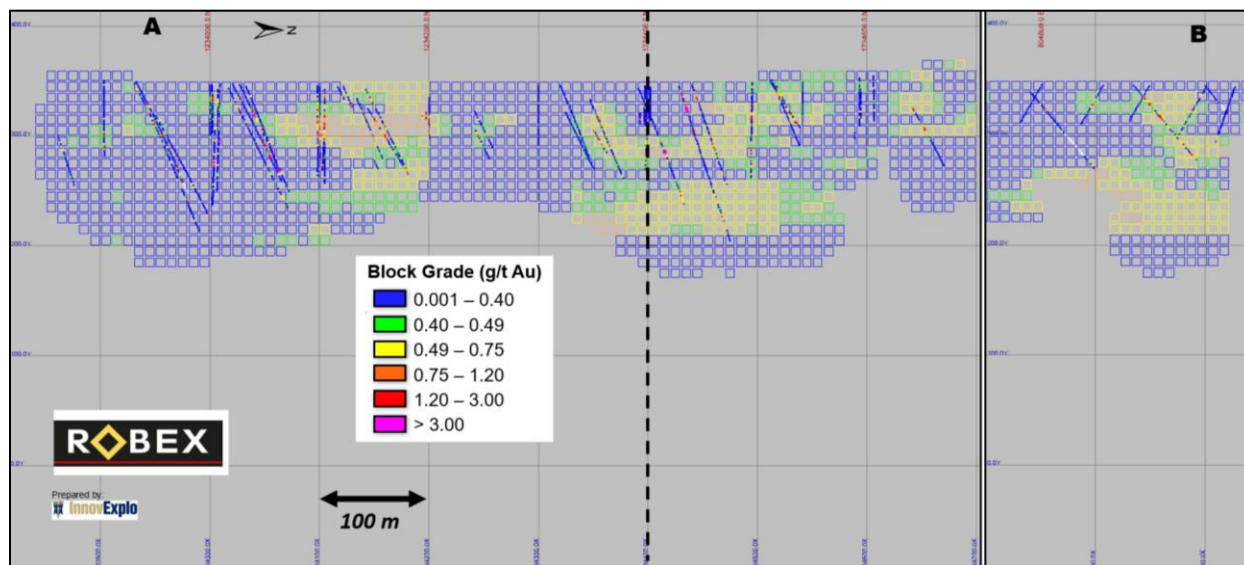
Figure 14.15 and Figure 14.16 illustrate examples of grade distribution on longitudinal and cross-section views.

**Table 14.10 – Composite search specifications**

Pass	No. of Composites		
	Min	Max	Max / Hole
Pass 1	18	24	7
Pass 2	12	24	7
Pass 3	6	24	7



**Figure 14.15 – Longitudinal view (A) and section view (B) of the gold grade distribution (OK) for the Main Zone (110).**



**Figure 14.16 – Longitudinal view (A) and section view (B) of the gold grade distribution (OK) for East Zone (190)**

## 14.13 Block Model Validation

### 14.13.1 Visual validation

A visual comparison between block model grades, composite grades and gold assays was conducted on sections, plans and longitudinal views for both densely and sparsely drilled areas. No significant differences were observed during the comparison and it generally provided a good match in grade distribution without excessive smoothing in the block model.

Visual comparisons were also conducted between ID2, OK and NN interpolation scenarios. The OK scenario selected for the resource estimate produced a block grade distribution representative of the mineralization style observed in the deposit.

### 14.13.2 Statistical validation

Table 14.11 compares the global mean block for three (3) interpolation scenarios (all blocks inside a mineralized zone) and the composite mean grades for each mineralized zone at a zero cut-off.

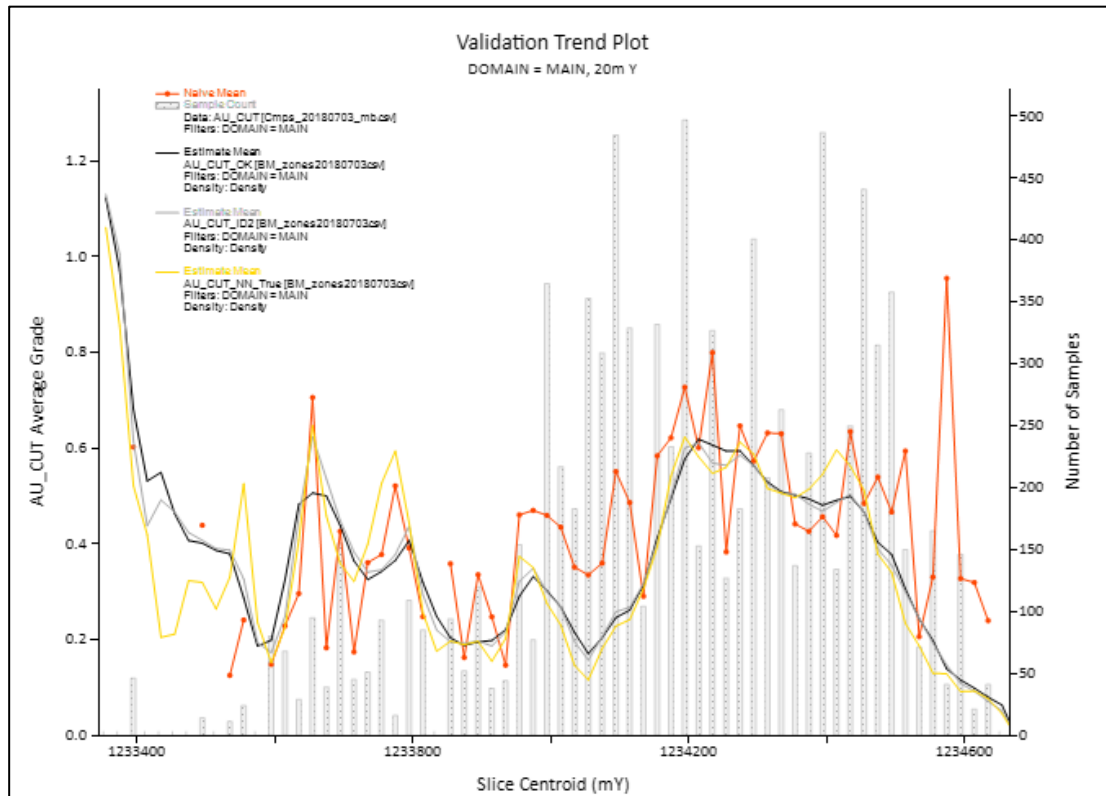
Cases in which the composite mean is higher than the block mean are often a consequence of clustered drilling patterns in high-grade areas.

**Table 14.11 – Comparison of block and composite mean grades at a zero cut-off for all blocks inside a mineralized zone**

Zone	Block code	Number of samples	Raw assay grades (cut g/t)	Number of composites	Composite grade (g/t)	Number of blocks	OK (g/t)	ID2 (g/t)	NN (g/t)
East		4,412	0.38	2,474	0.37	26,623	0.296	0.299	0.297
Intrusion		1,873	0.47	1,215	0.40	6,734	0.392	0.407	0.37
Main		17,887	0.51	9,593	0.49	4,5793	0.395	0.392	0.385
South		1,989	0.25	1,098	0.25	17,752	0.162	0.163	0.159
West		4,710	0.37	2,885	0.28	29,264	0.163	0.16	0.165
All zones		65,871	0.33	17,265	0.36	126,166	0.287	0.287	0.283

The comparison between composite and block grade distributions did not identify significant issues. As expected, the block grades are generally lower than the composite grades.

Figure 14.17 illustrates a cross-section swath plot example to compare the three different the block model grades (OK, ID2, NN) with the composite grades. In general, the model correctly reflects the trends shown by the composites with the expected smoothing effect.



**Figure 14.17 – A) Location of the composites and the slicing B) X-direction swath plot (slicing at MAIN) for the folder zones**

## 14.14 Cut-off Parameters

### 14.14.1 In-pit cut-off grade for saprolite and transition (oxide) profiles

Table 14.12 presents the Whittle input parameters and cut-off grade parameters used to estimate the in-pit resource for the saprolite and transition (oxide) weathering profiles.

The bedrock slope angle was set at 46.2° (reflecting current open pit operation at Nampala).

**Table 14.12 – Input parameters used for the in-pit cut-off grade estimation and Whittle pit shell optimization**

Parameters	Unit	Value
Gold price	CAD/oz	1,653
Sell cost	CAD/oz	5
Exchange rate	USD/CAD	1.29
Mining cost	CAD/t mined	3.25
Overburden removal cost	CAD/t excavated	2.98
G&A cost	CAD/t milled	10.55
Mill recovery	%	88
Mine recovery	%	95
Dilution	%	5
Processing Cost	CAD/t milled	6.32
Ore transportation	CAD/t milled	0
Strip Ratio	Waste : Ore	0.68 : 1
Slope angle in bedrock	°	46.2°
Calculated cut-off grade	Au g/t	0.42

Using the parameters shown above, a cut-off grade (CoG<sub>OP</sub>) of 0.40 g/t Au was calculated for the Whittle pit shell optimization using the following formula:

$$CoG_{OP} = \frac{(Processing + G\&A + Transportation) \times (1 + Dilution) \times 31.1035}{((Gold\ Price - sell\ Cost) \times (Mill\ recovery) \times Mine\ Recovery)}$$

The result was rounded to 0.40 g/t Au for the official in-pit cut-off grade for the Sapolite and Transition weathering profiles.

#### 14.14.2 In-pit cut-off grade for fresh rock (sulphide) profile

Table 14.13 presents the Whittle input parameters and cut-off grade parameters used to estimate the in-pit resource for the fresh rock (sulphide) profile.

The bedrock slope angle was set at 46.2° (reflecting current open pit operation at Nampala).



**Table 14.13 – Input parameters used for the in-pit cut-off grade estimation and Whittle pit shell**

Parameters	Unit	Value
Gold price	CAD/oz	1,653
Sell cost	CAD/oz	5
Exchange rate	USD/CAD	1.29
Mining cost	CAD/t mined	5.30
G&A cost	CAD/t milled	10.55
Mill recovery	%	88
Mine recovery	%	95
Dilution	%	5
Processing Cost	CA\$/t milled	21
Ore transportation	CA\$/t milled	0
Strip Ratio	Waste : Ore	0.93 : 1
Slope angle in bedrock	°	46.20°
Calculated cut-off grade	Au g/t	0.75

Using the parameters shown above, a cut-off grade (CoG<sub>OP</sub>) of 0.75 g/t Au was calculated for the Whittle pit shell optimization using the following formula:

$$CoG_{OP} = \frac{(Processing + G\&A + Transportation) \times (1 + Dilution) \times 31.1035}{((Gold\ Price - sell\ Cost) \times (Mill\ recovery) \times Mine\ Recovery)}$$

The official in-pit cut-off grade for fresh rock is 0.75 g/t Au.

## 14.15 Mineral Resource Classification

### 14.15.1 Mineral resource classification definition

The resource classification definitions used for this report are those published by the Canadian Institute of Mining, Metallurgy and Petroleum in their document “CIM Definition Standards - For Mineral Resources and Reserves” in 2014.

**Mineral Resource:** is a concentration or occurrence of solid material of economic interest in or on the Earth’s crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.

The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from geologic evidence and knowledge, including sampling.

**Measured Mineral Resource:** that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

**Indicated Mineral Resource:** that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

**Inferred Mineral Resource:** that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

#### 14.15.2 Mineral resource classification for the Nampala Project

By default, all interpolated blocks were assigned to the exploration potential category during the creation of the grade block model.

Measured resources were not defined for the Project.

Indicated resources were defined for blocks informed by at least 3 DDH and within 25 m from one DDH, estimated during Pass 1.

Inferred resources were defined for blocks informed by at least 2 DDH that show reasonable geological and grade continuity, estimated during Pass 1 and or Pass 2.

## 14.16 Mineral Resource Estimate

InnovExplo is of the opinion that the current mineral resource estimate can be classified as Indicated and Inferred resources based on the density of the processed data, the search ellipse criteria, the drilling density and the specific interpolation parameters. InnovExplo considers the 2018 MRE to be reliable and based on quality data, reasonable hypotheses and parameters that follow CIM Definition Standards.

Table 14.14 presents the in-pit resources by weathering profile (saprolite (oxide), transition and fresh rock (sulphide)) at the selected cut-off grade of 0.40 g/t Au (saprolite-transition) and 0.75 g/t Au (fresh).

**Table 14.14 – Nampala 2018 Mineral Resource Estimate**

Weathering Profiles	Indicated Resource			Inferred Resource		
	Tonnage (t)	Au (g/t)	Ounces	Tonnage (t)	Au (g/t)	Ounces
Saprolite (≥ 0.40 g/t)	7,606,000	0.72	175,000	2,688,000	0.71	61,000
Transition (≥ 0.40 g/t)	2,361,000	0.80	61,000	626,000	0.79	16,000
Fresh Rock (≥ 0.75 g/t)	181,000	1.03	6,000	115,000	1.08	4,000
<b>TOTAL</b>	<b>10,148,000</b>	<b>0.74</b>	<b>242,000</b>	<b>3,429,000</b>	<b>0.73</b>	<b>81,000</b>

**Notes to accompany the Mineral Resource table:**

1. Alain Carrier, P.Geo., M.Sc. is the “qualified person” (as defined by NI 43-101) for the mineral resource estimate and is considered “independent” of the issuer for purposes of section 1.5 of NI 43-101. InnovExplo is also considered to be “independent” of the issuer for purposes of section 1.5 of NI 43-101. The effective date of this mineral resource estimate is July 15, 2018.
2. These mineral resources are not mineral reserves, as they do not have demonstrated economic viability.
3. Resources are presented undiluted and in situ for open pit scenarios and are considered to have reasonable prospects for economic extraction.
4. The estimate encompasses five different zones in the Nampala deposit (Main, Intrusion, West, East and South) subdivided into mineralized domains (i.e., 17 domains) each defined by individual wireframes with a minimum true thickness of 2 m included within a broader domain (or dilution envelope).
5. High-grade capping was done on raw assay data before compositing and established on a per-zone basis: Main at 14.5 g/t Au, Intrusion at 7.0 g/t Au, West at 7.0 g/t Au, East at 7.0 g/t Au and South at 4.0 g/t Au, plus broader domains (or dilution envelopes) at 4.0 g/t Au.
6. Bulk density values were applied on the following basis for each weathering profile (g/cm<sup>3</sup>): saprolite at 1.64, transition at 2.18, fresh rock at 2.72.
7. Grade model resource estimation was evaluated from drill hole data using an ordinary kriging interpolation method on a block model using a block size of 10 x 10 x 10 m.
8. The estimate is reported for open pit potential scenarios at a 0.4 g/t Au cut-off for the saprolite and transition profiles and at a 0.75 g/t Au cut-off for the fresh rock profile. Cut-off grades were calculated using a gold price of USD 1,300/oz, a CAD:USD exchange rate of 1.29 (1-year trailing average) and the following parameters: (a) Saprolite and transition open pit scenario: mining cost per tonne = CAD 3.25; processing cost = CAD 6.32; G&A = CAD 10.55; pit slope of 46.2 degrees used during Whittle optimization; (b) Fresh rock open pit scenario: mining cost per tonne = CAD 5.30; processing cost = CAD 21.00; G&A = CAD 10.55; pit slope of 46.2 degrees

- used during Whittle optimization. The cut-off grades should be re-evaluated in light of future prevailing market conditions (metal prices, exchange rate, mining cost, etc.).
9. The mineral resource estimate presented herein is categorized as Indicated and Inferred mineral resources.
  10. The mineral resource estimate was prepared using GEOVIA GEMS 6.8.1. The estimate is based on 1,033 drill holes. A minimum true thickness of 2.0 m was applied, using the grade of the adjacent material when assayed or a value of zero when not assayed.
  11. Calculations used metric units (metres, tonnes, gram per tonne). Metal contents are presented in troy ounces (tonne x grade / 31.10348). The tonnage and ounces were rounded to the nearest thousand. The number of metric tons was rounded to the nearest thousand. Any discrepancies in the totals are due to rounding errors.
  12. CIM definitions and guidelines for mineral resources have been followed.
  13. InnovExplo is not aware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues, or any other relevant issue not reported in the Technical Report that could materially affect the mineral resource estimate.

Table 14.15 displays the Nampala Project 2018 In Situ Mineral Resource Estimate for the saprolite (oxide) and transition portions of the in-pit deposit per zones at the official 0.4 g/t Au cut-off grade and other cut-off grade scenarios.

**Table 14.15 – Nampala 2018 Mineral Resource Estimate by zone and weathering profile**

Zones	Weathering Profile	Indicated Resource			Inferred Resource		
		Tonnage (t)	Au (g/t)	Ounces	Tonnage (t)	Au (g/t)	Ounces
Main	Saprolite	4,061,000	0.75	98,000	366,000	0.92	11,000
	Transition	2,054,000	0.81	53,000	256,000	0.78	6,000
	Fresh	181,000	1.05	6,000	72,000	1.10	3,000
	TOTAL	6,296,000	0.78	157,000	694,000	0.90	20,000
Intrusion	Saprolite	1,027,000	0.67	22,000	173,000	0.60	3,000
	Transition	66,000	0.85	2,000	21,000	0.75	1,000
	Fresh	-	-	-	5,000	1.15	-
	TOTAL	1,093,000	0.68	24,000	199,000	0.63	4,000
West	Saprolite	622,000	0.65	13,000	600,000	0.68	13,000
	Transition	121,000	0.82	3,000	231,000	0.88	7,000
	Fresh	-	-	-	38,000	0.99	1,000
	TOTAL	743,000	0.67	16,000	869,000	0.75	21,000
East	Saprolite	1,698,000	0.70	38,000	1,236,000	0.70	28,000
	Transition	120,000	0.79	3,000	118,000	0.65	2,000
	Fresh	-	-	-	-	-	-
	TOTAL	1,818,000	0.70	41,000	1,354,000	0.69	30,000
South	Saprolite	198,000	0.61	4,000	313,000	0.64	6,000
	Transition	-	-	-	-	-	-
	Fresh	-	-	-	-	-	-
	TOTAL	198,000	0.63	4,000	313,000	0.60	6,000

Table 14.16 displays the Nampala Project 2018 In Situ Mineral Resource Estimate for the saprolite (oxide) and transition portions of the in-pit deposit at the official 0.4 g/t Au cut-off grade and other cut-off grade scenarios.

**Table 14.16 – Sensitivity analysis at different cut-off grades for the Saprolite (Oxide) and Transition portions of the Nampala deposit**

Cut-off grade	Indicated Resources			Inferred Resources		
	Tonnes (t)	Grade Au (g/t)	Ounces Au	Tonnes (t)	Grade Au (g/t)	Ounces Au
≥ 0.80 g/t Au	3,369,000	1.03	112,000	1,108,000	1.01	36,000
≥ 0.60 g/t Au	6,308,000	0.87	177,000	2,060,000	0.86	57,000
≥ 0.50 g/t Au	8,302,000	0.80	212,000	2,742,000	0.78	69,000
<b>≥ 0.40 g/t Au</b>	<b>9,967,000</b>	<b>0.74</b>	<b>237,000</b>	<b>3,313,000</b>	<b>0.73</b>	<b>78,000</b>
≥ 0.30 g/t Au	11,124,000	0.70	250,000	3,786,000	0.68	83,000

*Note: This table is not a mineral resource statement. The figures are presented to only show the sensitivity of the block model estimate to the cut-off grade.*

Table 14.17 displays the results of the Nampala Project 2018 In Situ Mineral Resource Estimate for the fresh rock (sulphide) portion of the deposit at the official 0.75 g/t Au cut-off grade and other cut-off grade scenarios.

**Table 14.17 – Sensitivity analysis at different cut-off grades for the Fresh Rock (Sulphide) portion of the Nampala deposit**

Cut-off grade	Indicated Resources			Inferred Resources		
	Tonnes (t)	Grade Au (g/t)	Ounces Au	Tonnes (t)	Grade Au (g/t)	Ounces Au
≥ 1.20 g/t Au	33,000	1.36	1,000	24,000	1.38	1,000
≥ 1.00 g/t Au	91,000	1.19	3,000	59,000	1.21	2,000
≥ 0.80 g/t Au	178,000	1.05	6,000	113,000	1.07	4,000
<b>≥ 0.75 g/t Au</b>	<b>181,000</b>	<b>1.05</b>	<b>6,000</b>	<b>115,000</b>	<b>1.07</b>	<b>4,000</b>
≥ 0.60 g/t Au	183,000	1.04	6,000	121,000	1.05	4,000
≥ 0.50 g/t Au	186,000	1.04	6,000	121,000	1.05	4,000

*Note: This table is not a mineral resource statement. The figures are presented to only show the sensitivity of the block model estimate to the cut-off grade.*

Table 14.16 and Table 14.17 should not be interpreted as a mineral resource statement. The reported quantities and grade estimates at different cut-off grades are presented with the sole purpose of demonstrating the sensitivity of the resource model to the selection of a reporting cut-off grade.

**15. MINERAL RESERVE ESTIMATE**

Not applicable for the current report.

**16. MINING METHODS**

Not applicable for the current report.

**17. RECOVERY METHOD**

Not applicable for the current report.

**18. PROJECT INFRASTRUCTURE**

Not applicable for the current report.

**19. MARKET STUDIES AND CONTRACTS**

Not applicable for the current report.

**20. ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

Not applicable for the current report.

**21. CAPITAL AND OPERATING COSTS**

Not applicable for the current report.

**22. ECONOMIC ANALYSIS**

Not applicable for the current report.

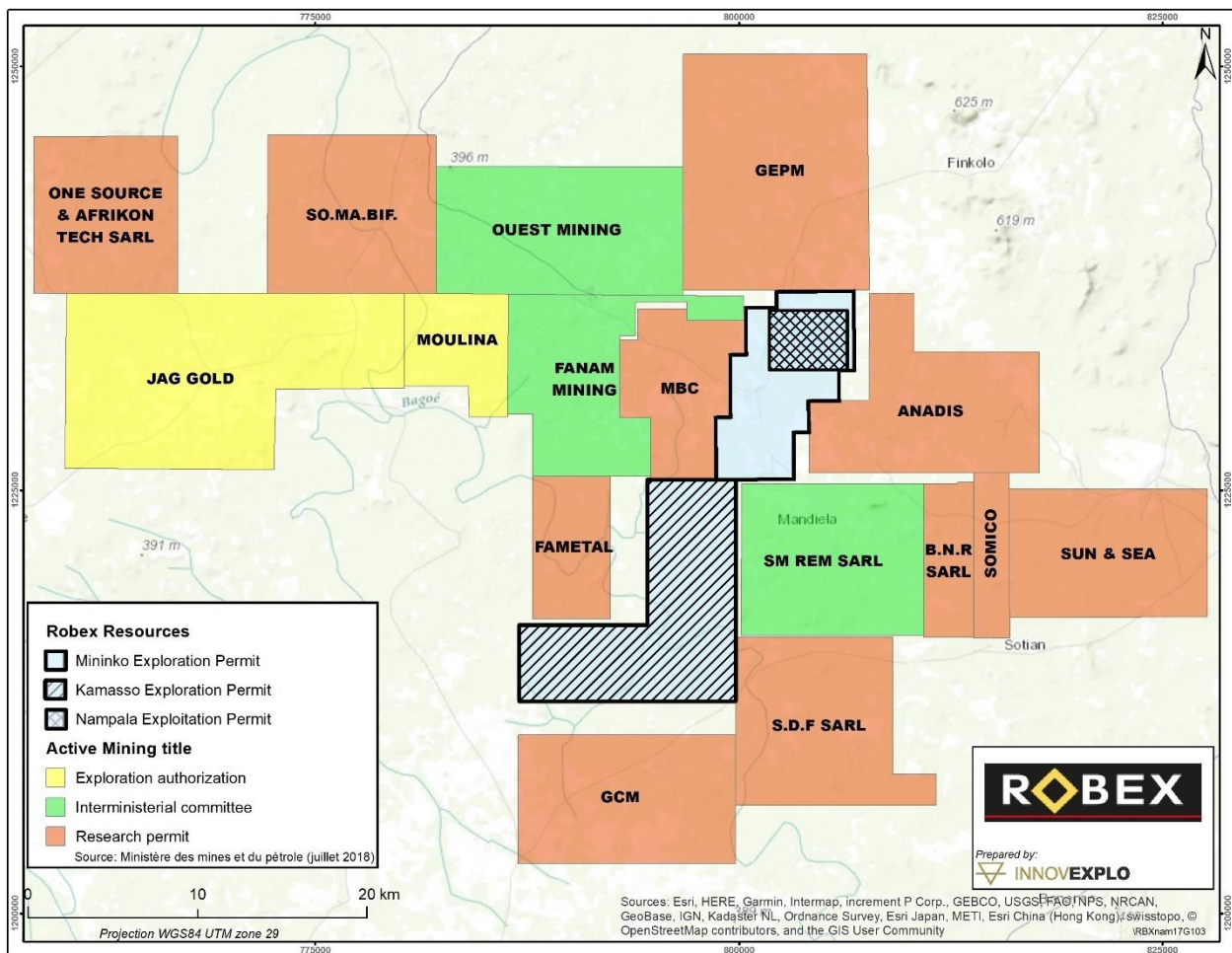
### 23. ADJACENT PROPERTIES

The Mali Online Repository (<https://mali.revenuedev.org/dashboard>) contains records of mineral exploration work and mining activity on adjacent properties. Most of the claims are owned by junior exploration companies. Recent work on adjacent properties has focused on gold exploration. Some gold producers are also known in the adjacent belts.

Figure 23.1 show the nearest adjacent properties.

InnovExplo has not verified the information below about mineralization on adjacent properties. The presence of significant mineralization on these properties is not necessarily indicative of similar mineralization on the issuer's Property.

The authors relied exclusively on information submitted by the issuer, information found on the Mali Online Repository, and descriptions of projects as presented on official company websites.



**Figure 23.1 – Adjacent property map (Mali Online Repository and Ministry of Mines and Petroleum, April, 2018)**

## **23.1 Property Held by the Issuer**

### **23.1.1 Kamasso**

The Kamasso Permit is an exploration permit wholly owned by Robex with a 1% NSR royalty payable to GSI. The permit is located immediately south of the Mininko Permit and 74 km southwest of the town of Sikasso. It has a total surface area of 100 km<sup>2</sup>.

Geologically, it is underlain by the southern extension of the stratigraphic and structural sequences that host the Nampala deposit.

In 2005, a regional soil and termite-mound survey over the permit outlined several gold anomalies (Sikoro, Kadjila, Sirakoroni target areas). A detailed geological and geophysical program over the permit demonstrated the continuation of the same geological and structural setting documented on the Nampala and Mininko Permits onto the Kamasso Permit.

In 2009, a prospecting and drilling program was completed for a total of 700 m drilled over anomalous soil sampling results in the Sikoro area.

## **23.2 Mining Operations in the Area**

### **23.2.1 Morila gold mine**

The Morila gold mine is approximately 80 km north-northwest of the Nampala Mine and is a joint venture between AngloGold Ashanti (“AngloGold”) and Randgold Resources (“Randgold”), each of which has a 40% interest. The remaining 20% is held by the Government of Mali. Randgold manages the mine. Morila is situated 280 km southeast of Bamako. Mine closure was originally scheduled for 2013 but retreatment of the TSF material, mining of the Domba satellite pit and an agreement to acquire Ntiola and Viper targets from Birimian Ltd (“Birimian”) have extended the life of mine to 2020.

Morila has produced more than 6 Moz of gold since mining started from the open pit in 2000. After converting the mine to a stockpile treatment operation in 2009 and after completing the pit pushback program initiated in 2013, the mine was again resized to process stockpiles of mineralized waste from mid-2015 and then converted to a TSF reclamation operation in the second half of 2016. The Domba Project is located 8.5 km from the plant within the permit area. Mining of the oxide portion of the deposit started in September 2017. The Ntiola and Viper targets are located 24 km from the plant outside the current Morila permit area, and mining of these deposits is planned for 2018 pending receipt of the necessary permits.

Morila published JORC compliant reserves for the TSF material (10.3 Mt at 0.54 g/t for 179 koz) and the remaining ore from the Domba satellite pit (270 kt at 1.47 g/t for 13 koz). After an agreement was reached with Birimian, a full feasibility study and environmental impact assessment was completed on the near-mine deposits of Ntiola and Viper. The geological studies resulted in a total reserve of 655 kt at a grade of



1.96 g/t for 41 koz at Ntiola, and 589 kt at a grade of 1.49 g/t for 30 koz at Viper. The mining of these deposits is still subject to the transfer of relevant portions of the permits to Morila. The related documentation has been filed with the authorities (<http://www.randgoldresources.com>).

### **23.2.2 Syama Belt deposits**

The Syama Belt is characterized by a sequence of highly strained basalts and andesites interbedded metasedimentary interfaces (greywackes and argillites) (Olson et al., 1992). Three gold deposits are located in this belt: Syama (Mali), Tabakoroni (Mali), and Sissingué (Côte d'Ivoire) as well as other smaller exploration programs (Archibald, 2017). Resolute Mining Ltd ("Resolute") has undertaken extensive exploration (RC and DDH drilling) along the 80-km strike length of the Syama Belt, including the Tabakoroni deposit, as well as extensive exploration and definition diamond drilling on the Nafolo Zone (<https://www.rml.com.au/>).

#### **23.2.2.1 Syama Mine**

The Syama Mine is approximately 40 km northeast of the Nampala Mine. Resolute owns an 80% interest through equity in Société des Mines de Syama S.A. ("SOMISY") and the other 20% interest is held by the Mali Government. The mine has total JORC compliant reserves of 2.9 Moz of gold and total resources of 7.5 Moz (Resolute website). Gold mineralization is typically, but not exclusively, hosted in chloritized basalt, with the sulphidic ore consisting of lenticular bodies of intense ankerite-quartz veinlet stockworks, zones of sheeted ankerite-quartz veinlets and breccia bodies. Mining at the main Syama pit was commissioned in 2009 and completed in May 2015, with ore for the sulphide circuit currently being sourced from the previously stockpiled sulphide ore, underground development ore, and material from satellite operations. Development of the Syama underground mine commenced in September 2016 and will extend the mine life to beyond 2028. The underground mine is scheduled to commence production in December 2018.

Nafolo is a new zone of mineralization located immediately south of the Syama deposit and separate from the main orebody. Discovered in October 2016, follow-up drilling confirmed that Nafolo has similar characteristics and tenor to the Syama orebody.

#### **23.2.2.2 Tabakoroni**

Tabakoroni is a satellite operation located 35 km east of the Nampala Mine in the same geological sequence. It is wholly owned by Resolute. Open pit operations are scheduled to commence production in late 2018. Tabakoroni has resources of 778,000 oz of gold (10.2 Mt at 2.4 g/t Au) and an ore reserve of 296,000 oz (3.16 Mt at 2.9 g/t Au) (Resolute Mining Ltd, press release of July 5, 2018).

### **23.2.3 Pitangoma Est**

The Pitangoma Est property is a joint venture between Resolute and Altus Strategies Plc ("Altus") covering 106 km<sup>2</sup>. The property is located on the Syama shear zone

approximately 15 km south of the Tabakoroni deposit (610 koz Au) and 40 km east-southeast of the Nampala Mine. Resolute has the right to earn up to 70% interest in the project by funding USD 3 million in exploration and completing a feasibility study. Thereafter, Altus may elect to co-fund its 30% interest on a pro rata basis or exchange its interest for a 2% NSR royalty.

Prior to the project's acquisition and joint venture, Endeavour Mining Corporation had conducted exploration work that included regolith sampling (6,930 soil and 1,230 auger samples), lithological mapping, airborne geophysics (VTEM), BLEG stream sediment sampling, RC drilling (2,160 m) and diamond drilling (6,450 m). Resolute later completed 110 AC holes for a total of 4,869 m and a gradient array IP survey focused on the Misseni prospect. This was followed by a 7-hole (3,167 m) RC drilling program in 2017 ([www.Altus-Strategies.com](http://www.Altus-Strategies.com), June 2018).

### **23.3 Adjacent Exploration Properties**

Most of the adjacent claims are currently held by individual owners with little recent work. In addition, it is difficult to find information on the work conducted on those claims as reports are generally not filed for public access.

#### **23.3.1 Gladie**

Gold Fields Limited conducted exploration work in 2012 on their Gladie Project, which is now owned by an individual. No recent activity has been publicly reported. The Gladie exploration permit covers 52 km<sup>2</sup> and its centre is located approximately 7 km west-southwest of the Nampala deposit. In 2012, the work included: regional and detailed mapping, soil sampling (800 m x 100 m with detailed 200 m by 50 m in more prospective areas) 4,200 m of AC/auger drilling on three grids and trenching over four lines to test gold anomalies. Results from the work included 16 gold-in-soil anomalies and gold mineralization extending for 1,300 m and over 10 m wide based on three anomalies drilled by AC. The best AC interval included 0.7 g/t Au over 9 m with no significant grades in the trenches. No follow-up work was conducted (Gold Fields, 2012).

#### **23.3.2 Kokouna**

The last report by G.E.P.M SARL on exploration at their Kokouna Permit was in 2012. The permit is 147 km<sup>2</sup> and is located approximately 30 km north-northeast of the Nampala mine site. A three-phase exploration program was conducted, with Phase 1 including systematic sampling of a gold-bearing vein. A total of 105 samples were taken every 50 m along 5 lines 1,000 m long and 100 m apart. Phase 2 included follow-up on the Placer Mandiéla anomaly, with 19 vertical holes yielding 37 samples for analysis. The goal of Phase 3 was to establish a partnership with Canyon Resources over two study areas: Placer Kokouna and Placer Mandiéla. In the end, however, G.E.P.M. decided to do follow-up work on the Kokouna Permit and was still seeking a partner for the project at the time of the report. No future work has since been reported and the permit is now held by a local prospector (G.E.P.M. SARL 2012 Annual Report, Bouare, M.).

### 23.3.3 Nangalasso

The Nangalasso Project is located approximately 30 km west of Resolute's Syama Mine and 40 km south-southwest of the Nampala Mine. The project area encompasses 345 km<sup>2</sup> and consists of the Nangalasso and Sotian permits. Since acquiring the property in May 2016 from Taruga Gold Limited, Kodal Minerals PLC ("Kodal") holds 100% of the exclusive rights for exploration and development for both permits by agreement with Gold Corporation Mali SARL ("Gold Corp. SARL."). Previous exploration work identified a broad gold anomaly typically associated with quartz-veining within and at the contact between a felsic granitoid intrusion and fine-grained sediments. Kodal's exploration work on the property includes surface geochemical sampling, auger geochemical drilling, trench sampling and wide-spaced reconnaissance AC drilling in 2016-2017. Significant results from the drilling program include 7.1 g/t Au over 3 m within a broader zone of 1.25 g/t Au over 21 m; 7.84 g/t Au over 3 m; 7.8 g/t Au over 1 m. Significant results from the trench sampling program yielded broad anomalous zones including 7 m at 3.84 g/t Au (<https://kodalminerals.com>).

### 23.3.4 Fala

The Fala Permit (now expired) is located approximately 20 km southwest of the Nampala Mine with a surface area of 38 km<sup>2</sup>. In the 2014 Q1 Report of Fametal Mining Resources ("Fametal"), 10 subvertical wells were drilled for a total of 153.70 m with an 80% success of finding visible gold in the pan. The permit expired in February 2016 and was not renewed (Fametal 2014 Q1 Report).

## 24. OTHER RELEVANT DATA AND INFORMATION

### 24.1 Operation and History

The Nampala Mine is an active open-pit operation that reached commercial production on January 1, 2017. As of June 22, 2018, the Nampala Mine had produced approximately 71,000 ounces of gold since startup in 2014. The objective for 2018 is 38,000 to 42,000 ounces of gold with a total cash cost per ounce sold of CAD 600 to CAD 650 and an all-in sustaining cost per ounce sold of CAD 850 to CAD 900 (Robex 2018 MD&A).

In 2013, Robex started construction on a mineral processing plant for the Nampala mine site. In May 2014, Robex announced that the plant was in partial operation at 1,600 tpd, and quickly increased production to 2,500 tpd by the beginning of July 2014 (Robex news releases of May 27, 2014 and August 26, 2014).

The Nampala Mine almost fully operational when, in October 2014, Robex announced that they were suspending their operations for an undetermined amount of time to adjust and optimize the recovery circuit and site installations in order to make the project more profitable. It was determined that elution (the last metallurgical stage in the production line) was unsatisfactory and the system capacity was too small to move to a capacity of 4,000 tpd as budgeted in the commissioning period (Robex 2014 MD&A). According to a Robex news release of October 9, 2014, it would take time to find new capital investments to improve the mill efficiency. Table 24.1, shows the summary of the operating data for 2014.

**Table 24.1 – Operating data for the 2014 testing period (from the Robex 2014 MD&A)**

Year ended December 31, 2014		
Racking	Total dry tonnage (t)	187,434
	Grade (g/t)	0.52
	Coarse tonnage (+850 µm) (t)	58,388
	Grade (g/t)	0.84
	Coarse proportion (%)	31%
CIL	Supply (t)	170,433
	Grade (g/t)	0.53
	Discharge grade (g/t)	0.16
	Recovery (%)	69%
Gold Room	Gold produced (kg)	19.21
	Gold produced (oz)	617.6

On June 22, 2015, Robex resumed its activities at the Nampala Mine with increased production and gold recovery (Table 24.2). In July 2015, Robex announced the start of commercial production at the Nampala plant with a rate of 600 tpd (Robex news release of July 2, 2014). At that time, several components needed to progressively increase the mill throughput were not yet complete. By January 2016, the mine and mill were operating without stoppage and on September 9, 2016, Robex announced that the mine was generating positive cash flow for the first time with production levels around 3,000 tpd of ore.

In January 2017, the mine attained commercial production. According to the 2017 MD&A, ore processing averaged 4,400 tpd at a grade of 0.85 g/t. Moreover, the operational stripping ratio had been lowered to 1.5, compared to 2.4 in 2016.

In the first quarter of 2018, ore processing reached an average of 4,900 tpd and gold production increased by 54% compared to the same period in 2017, reaching 11,989 oz compared to 7,771 oz in Q1 2017 (Robex Q1-2018 MD&A).

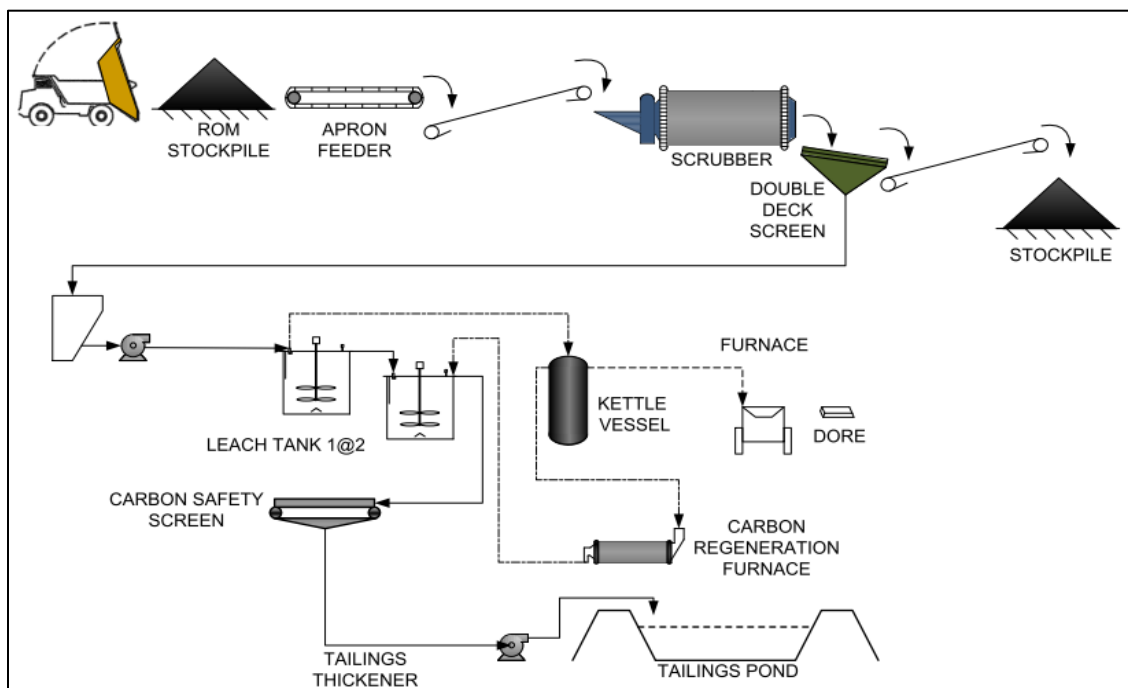
Table 24.2 presents the pre-production and production data from 2015 to 2017.

**Table 24.2 – Pre-production (2015-2016) and production (2017) data (source: 2016 and 2017 Robex MD&A)**

Year	Pre-production		Production
	2015	2016	2017
Ore processed (t)	61,679	719,090	1,615,966
Grade (g/t)	0.98	0.82	0.85
Recovery (%)	83.60%	80.30%	83.90%
Gold ounces produced (oz)	1,629	12,051	36,997

## 24.2 Flowsheet evolution

Since its commissioning, the mill's processing methods have evolved significantly to address the recovery and throughput issues of 2014 and also to improve the mill efficiency. The first plant start-up (Phase 1) took place in the spring of 2014 with a simplified process in which only fine ore was to be leached and gold was recovered with a kettle-type elution/electrolysis column (Figure 24.1). The intent of the flowsheet was to produce gold rapidly to fund the remainder of the plant upgrade.



**Figure 24.1 – Original (2014) flowsheet at the Nampala mine site**

The process was supposed to stockpile the coarse fraction of the scrubber output for future processing in a modified concentrator. After experiencing gold recovery issues, an external audit was carried out by a consulting firm (Soutex Inc.) to highlight process inadequacies. The problems revealed by the audit included:

- Optimal liberation size not reached;
- Lower gold grade in the finer material when compared to the coarser material (reduced feed grade);
- Material sent to CIL was too coarse and resulted in sanding the circuit;
- Small CIL circuit with only two tanks and no downcomers;
- Retention time too low;
- Non-conventional strip and electrolysis system not adapted to the Nampala low-grade operation.

Taken individually, the above problems would not be insurmountable, but collectively, they made ore concentration challenging. In the first months of operation, the gold production was close to nil despite strong efforts from the onsite team. In October 2014, production was stopped and only a minimal crew remained onsite for maintenance and safety.

A case study (not published) was then carried out on the Nampala concentrator to evaluate how the flowsheet could be upgraded to ensure viable economics in terms of throughput and gold recovery. Soutex was commissioned to optimize the process design. Their proposed major modifications included:

- A ball mill
- Gravity concentration equipment
- Hydrocyclones
- A trash screen
- Four additional CIL tanks
- A Zadra elution system (acid wash vessel, strip vessel and carbon water system)
- Two electrolysis cells
- A new lime distribution system
- New tailings pumping system
- A new fresh water and process water system (storage and distribution)
- Upgrade of the power plant
- New fuel storage and distribution system

Table 24.3 shows the main design criteria for the new flowsheet.

**Table 24.3 – Engineering design criteria for the ball mill**

Description	Value	Units	Source
Daily throughput	4,000	tpd	Objective
P <sub>99</sub> at CIL feed	<300	µm	Historical testwork
P <sub>80</sub> at CIL feed	<125	µm	Historical testwork
BWi	10-13	kWh/t	Client
Gravity plant gold recovery	15	%	Objective
Plant gold recovery	86.5	%	Objective

The proposed flowsheet for the second phase, including two comminution circuits, is presented in Figure 24.2 and Figure 24.3.

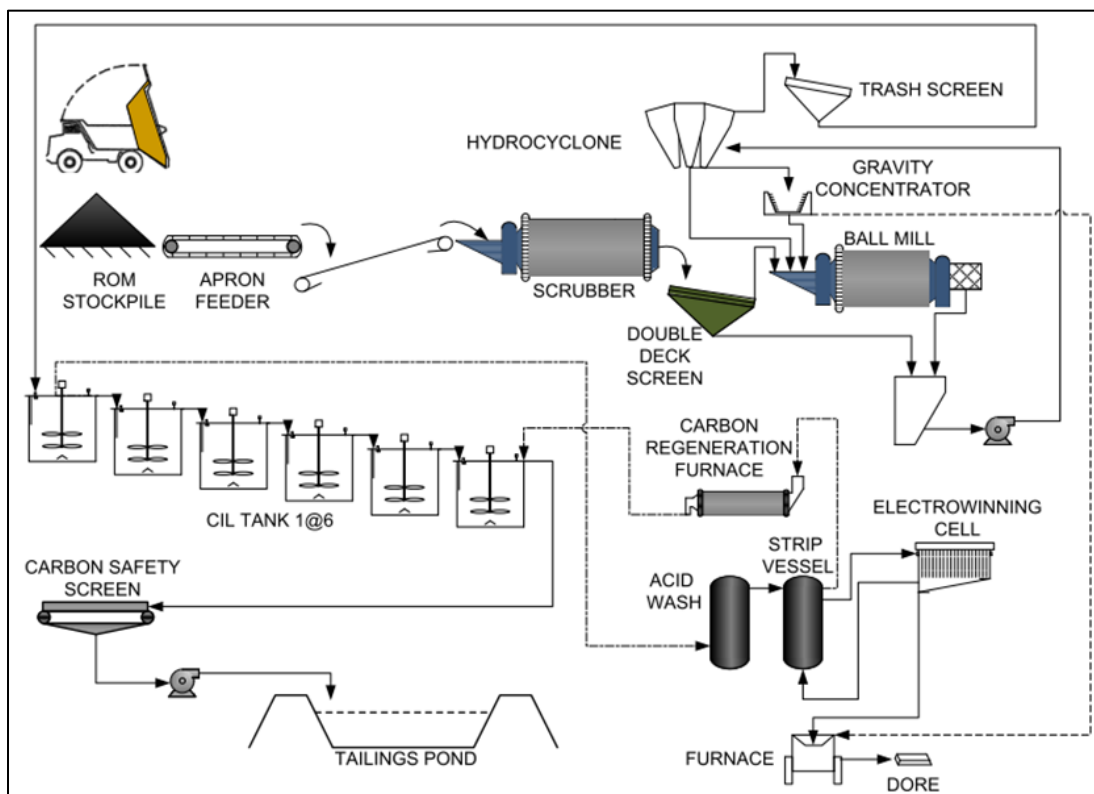


Figure 24.2 – Proposed Phase 2 flowsheet for the Nampala mine site

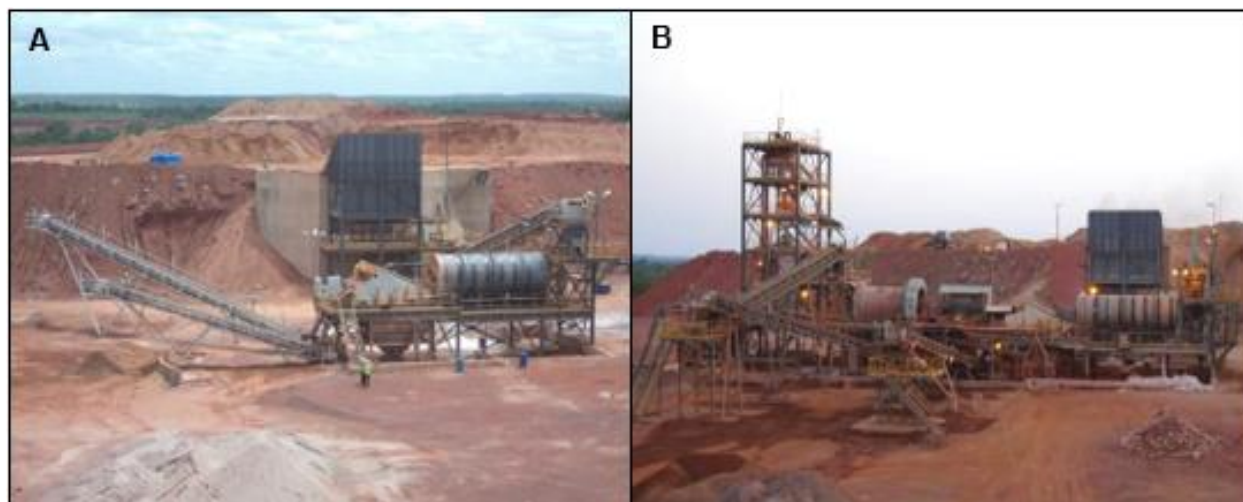


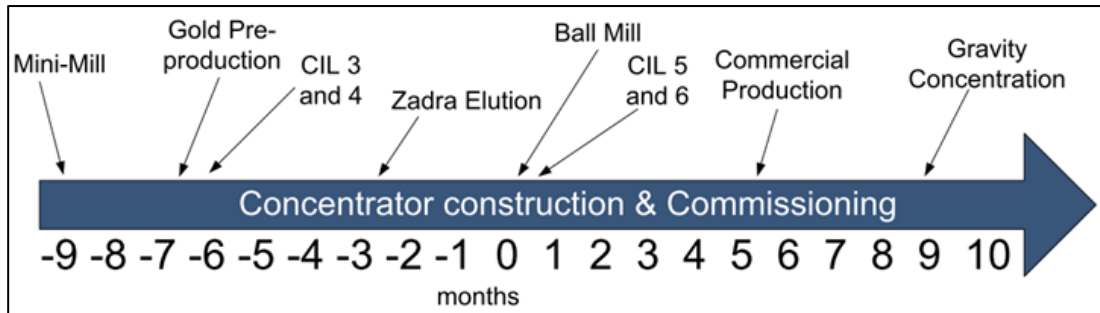
Figure 24.3 – Comminution circuit before (A) and after (B) the Phase 2 expansion

### 24.3 Plant performances

Since major pieces of equipment were already available from the Phase 1 plant, it was possible to gradually commission the new circuits. First, a mini-mill with a capacity



of 200 kW was installed on a temporary structure to start the pre-production phase with the available equipment. During this phase, both CIL tanks from Phase 1 were used as well as the kettle-type elution vessel. This allowed the gradual training of new employees and safe equipment commissioning as the team could focus on one circuit at a time. Figure 24.4 shows the evolution of the commissioning, zero being the date of the ball mill commissioning.



**Figure 24.4 – Concentrator commissioning Timeline**

The former elution system was insufficient to sustain the projected production. As the new CIL tanks were being put into operation, room for gold to be trapped in carbon was created and when the Zadra elution system became operable, the fully loaded carbon pores allowed for rapid gold recovery. By the start-up of the ball mill, the most crucial stage, the operating team was already accustomed to operating the mini-mill and cyclones, and the CIL and elution plant were already in operation, all of which led to a smooth and fast transition towards commercial production.

Figure 24.5 shows the concentrator production objectives (dashed lines) and the evolution of the same key performance indicator (“KPI”) (solid lines). Month 0 refers to the beginning of commercial production in January 2017. The daily tonnage and gold production objectives were reached within 6 months, and recovery has been close to the target since Month 1 and recently exceeded the target. Availability has generally been close to the objective since Month 1, except for major failures that shut down production for several days (the scrubber in Month 1 and the power plant in months 6, 7, 16, 17).

Generally speaking, the plant is exceeding the production targets in terms of tonnage and gold produced, and recently exceeded the design criteria for recovery. Downtime caused by power issues still affects production, but it is expected that such issues will be solved in the third quarter of 2018.

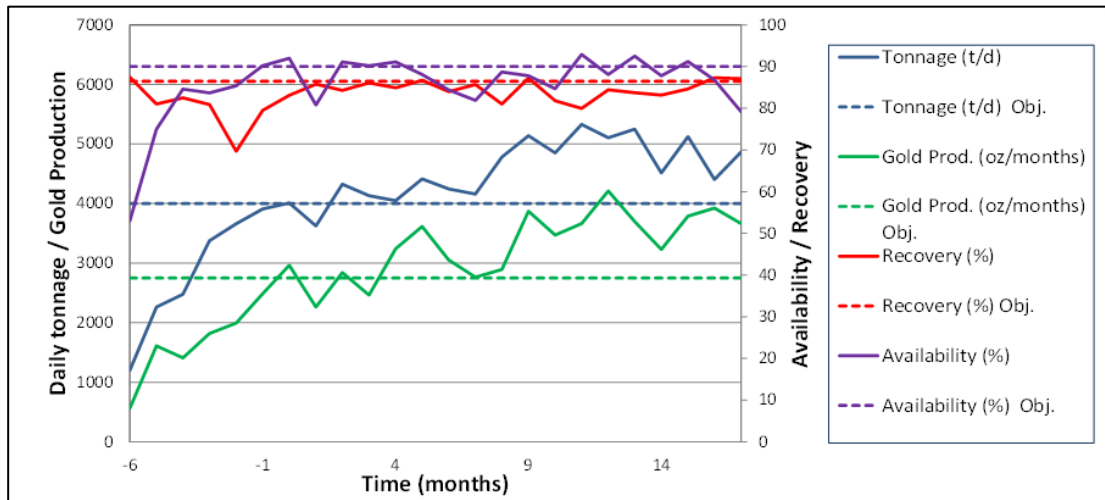


Figure 24.5 – Production objectives and KPI data

## 25. INTERPRETATIONS AND CONCLUSIONS

The objective of InnovExplo's mandate was to prepare a mineral resource estimate (the "2018 MRE") for the Nampala gold mine in southern Mali using validated recent (2017-2018) and historical drill hole data. This Technical Report and the mineral resource estimate presented herein meets these objectives.

InnovExplo created a 3D model of the Nampala gold deposit (weathering profiles, litho-geological model, mineralized zones) using all available geological and analytical information. In order to conduct accurate resource modelling of the deposit, InnovExplo based its mineralized-zone wireframe model on the drill hole database and the authors' knowledge of local geology. Five (5) mineralized zones were modelled into multiple solids in Leapfrog and GEMS. The interpolation of the mineralized zones was constrained by the wireframes.

After conducting a detailed review of all pertinent information and completing the 2018 MRE, InnovExplo concluded the following:

- Geological and grade continuity were demonstrated for the five (5) gold-bearing zones of the Nampala gold deposit;
- The recent and historical drill holes provided sufficient information to complete the 2018 MRE;
- The results are reported for open pit scenarios for saprolite (oxide), transition zone (sap rock) and fresh rocks (sulphide);
- The total Indicated Resources stand at 242,000 ounces of gold (175,000 oz in the oxide profile, 61,000 oz in the transition zone, and 6,000 oz in fresh rock) corresponding to a total of 10,148,000 t at 0.74 g/t Au;
- The total Inferred Resources stand at 81,000 ounces of gold (61,000 oz in the oxide profile, 16,000 oz in the transition zone, and 4,000 oz in fresh rock) corresponding to a total of 3,429,000 t at 0.73 g/t Au;
- The 2017-2018 drilling program had a positive impact on the 2018 MRE, representing an increase of 10.8% in ounces of gold (+8.7% in tonnage and +2.4% in grade) based on sensitivity tests completed with the same parameters, with and without the 2017-2018 drill holes;
- It is likely that additional lateral diamond drilling on the Nampala exploitation permit would increase the Inferred Resource tonnage and upgrade some of the Inferred Resources to the Indicated category;
- There is potential for additional gold discoveries along the NNE-SSW Nampala trend on the Mininko exploration permit.

There is potential for additional resources in the following areas of the Nampala gold deposit:

- Main: This zone continues at depth in fresh rock and could add resources in the main mine area;
- Intrusion and West: Mineralization continues in these zones to the west of the Main Zone
- South: This zone is open, with limited drilling beyond the mineralized areas;
- East: This zone is open, with limited drilling beyond the mineralized areas.

Table 25.1 identifies the significant internal risks, potential impacts and possible risk mitigation measures that could affect the economic outcome of the Project. The list does not include the external risks that apply to all mining projects (e.g., changes in metal prices, exchange rates, availability of investment capital, change in government regulations, etc.). Significant opportunities that could improve the economics, timing and permitting of the Project are identified in Table 25.2. Further information and study are required before these opportunities can be included in the project economics.

**Table 25.1 – Risks for the Nampala Project**

<b>RISK</b>	<b>Potential Impact</b>	<b>Possible Risk Mitigation</b>
<b>Poor social acceptability</b>	Possibility that the Project could not be explored or exploited.	Develop a pro-active and transparent strategy to identify all stakeholders and develop a communication plan. Organize information sessions, publish information on the mining project and meet with host communities.
<b>Metallurgical recoveries below expectations for the transition zone</b>	Recovery might differ from what is currently being assumed for the mineralization coming from the transition zone.	Further variability testing of the deposit to confirm metallurgical conditions and efficiencies.
<b>Metallurgical recoveries below expectations for fresh rock</b>	Recovery might differ from what is currently being assumed for the mineralization coming from the fresh rocks.	Characterization of the deposit to confirm metallurgical conditions and efficiencies.

**Table 25.2 – Opportunities for the Nampala Project**

<b>OPPORTUNITIES</b>	<b>Explanation</b>	<b>Potential benefit</b>
<b>Delineation and definition drilling</b>	Potential to upgrade resource categories.	Adding indicated resources increases the economic value of the mining project.
<b>Exploration drilling on Nampala South, additional oxide material</b>	Potential to identify additional inferred/indicated resources.	Adding inferred and/or indicated resources increases the economic value of the mining project.
<b>Exploration drilling on Nampala West and Intrusion</b>	Potential to identify additional inferred/indicated resources in the immediate area of the current open pit operation.	Adding inferred and/or indicated resources increases the economic value of the mining project.
<b>Exploration drilling on Nampala East</b>	Potential to identify additional inferred resources.	Adding inferred resources increases the economic value of the mining project.
<b>Exploration program for potential new discoveries over the entire Property (Nampala and Mininko permits)</b>	Validate the potential and conduct exploration along the NNE-SSW Nampala trend over the entire Property.	Potentially advance the project with new areas to be developed.

InnovExplo concludes that the 2018 MRE warrants advancing the Nampala Project to the mineral reserve upgrade phase conditional on positive results from engineering and economic studies and detailed mine planning.

InnovExplo considers the 2018 MRE to be reliable, thorough, based on quality data, reasonable hypotheses, and parameters that conform to NI 43-101 and CIM Definition Standards.

## 26. RECOMMENDATIONS

Based on the results of the 2018 MRE, InnovExplo recommends a review and update of the mineral reserves statement of the Nampala gold mine through engineering studies, detailed mine planning and economic studies.

Given the successful results of the 2017-2018 drilling program, follow-up drilling should be completed over the Main, Intrusion, West, South and East zones with the aim of upgrading resource categories and adding new resources. A property-wide program should also be conducted to assess the potential of the Nampala and Mininko permits and to explore the entire NNE-SSW Nampala trend for new discoveries. The program should focus on geochemical and geophysical anomalies and previously identified gold mineralized intercepts in historical drill holes.

In summary, InnovExplo recommends the following two-phase program:

### Phase I

- Update the mineral reserves through detailed mine planning and engineering and economic studies, and prepare a supporting NI 43-101 Technical Report;
- Conduct the first phase of a delineation drilling program (to potentially upgrade and add resources) comprising approximately 6,000 m of drilling (RC and diamond drilling);
- Conduct the first phase of an exploration drilling program on the Main, Intrusion, West, South and East zones (to potentially add new resources) comprising approximately 14,000 m of drilling (RC and diamond drilling);
- Carry out the first phase of a property-wide exploration program (Nampala and Mininko permits) to search for new discoveries (compilation study, field work, follow-up program on geochemical anomalies, etc.);
- Perform metallurgical testwork to characterize mineralized transition zone and fresh rock material.

### Phase II

- Complete the delineation drilling program (to potentially upgrade or add resources) with a second phase comprising approximately 4,000 m of drilling (RC and diamond drilling);
- Complete the exploration drilling program on the Main, Intrusion, West, South and East zones (to potentially add new resources) with a second phase comprising approximately 8,000 m of drilling (RC and diamond drilling);
- Complete the second phase of the property-wide exploration program with the aim of finding new discoveries;
- Prepare an updated mineral resource and reserve estimate and a supporting NI 43-101 Technical Report.

InnovExplo has prepared a cost estimate for the recommended two-phase work program to serve as a guideline for the Project. The budget for the proposed program is presented in Table 26.1. Expenditures for Phase 1 are estimated at CAD 4,082,500

(incl. 15% for contingencies). Expenditures for Phase 2 are estimated at CAD 2,300,000 (incl. 15% for contingencies). The grand total is CAD 6,382,500 (incl. 15% for contingencies). Phase 2 is contingent upon the success of Phase 1.

**Table 26.1 – Estimated costs for the recommended work program**

<b>Phase I - Work Program</b>		<b>Budget (CAD)</b>
<b>1.a</b>	Mineral reserves update and 43-101 Technical Report	250,000
<b>1.b</b>	Delineation drilling program – Phase I	750,000
<b>1.c</b>	Exploration drilling program on the Main, Intrusion, West, South and East zones – Phase I	1,750,000
<b>1.d</b>	Property-wide exploration program (Nampala and Mininko permits) – Phase I	300,000
<b>1.e</b>	Metallurgical testwork on mineralized transition zone and fresh rock material	500,000
	<b>Subtotal</b>	<b>3,550,000</b>
	<b>Contingency (15%)</b>	<b>532,500</b>
	<b>Total</b>	<b>4,082,500</b>
<b>Phase II - Work Program</b>		<b>Budget (C\$)</b>
<b>2.a</b>	Delineation drilling program – Phase II	500,000
<b>2.b</b>	Exploration drilling program on the Main, Intrusion, West, South and East zones – Phase II	1,000,000
<b>2.c</b>	Property-wide exploration program (Nampala and Mininko permits) – Phase II	200,000
<b>2.d</b>	Mineral resource and reserve update and 43-101 Technical Report	300,000
	<b>Subtotal</b>	<b>2,000,000</b>
	<b>Contingency (15%)</b>	<b>300,000</b>
	<b>Total</b>	<b>2,300,000</b>
	<b>Total Phase I + II</b>	<b>6,382,500</b>

InnovExplo is of the opinion that the recommended two-phase work program and proposed expenditures are appropriate and well thought out, and that the character of the Project is of sufficient merit to justify the recommended program. InnovExplo believes that the proposed budget reasonably reflects the type and the amount of work to be done.

The issuer initiated Phase I with a new drilling program which begun in September 2018 on Nampala gold mineralized zones (Main, Intrusive, West, East and South) with the main objectives of potentially upgrading Inferred resources into Indicated and adding new Inferred resources to the Project (refer to Robex Press Release of September 24, 2018). The new program plans an effort of approximately 20,000 m of drilling. Validated results were not available at the time of this report.

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